MATERNAL SKIN-TO-SKIN CONTACT FACILITATORS AND BARRIERS

Registered Nurses' Perceptions about Facilitators and Barriers to Maternal Skin to Skin Contact in the Operating Room

Magdalena Dobosiewicz, BScN

Submitted in partial fulfillment of the requirements for the degree of

Master of Arts in Applied Health Sciences

(Nursing)

Faculty of Applied Health Sciences, Brock University

St. Catharines, Ontario

© September 2015

Abstract

It is recommended that all new mothers experience skin-to-skin contact (SSC) with their newborns immediately after birth. However, SSC is not commonly practiced after cesarean deliveries. To understand facilitators and barriers regarding SSC in the operating room (OR), a descriptive online and paper survey was conducted with 68 Registered Nurses from four hospitals in Ontario. The theory of planned behavior framed the study.

Nurses had positive attitudes, and believed most health care team members supported SSC in the OR, but were uncertain about their control over the behavior. Nurses who had practiced the behavior in the past had more positive attitudinal and normative beliefs, and perceived some barriers as less difficult. Attitude and past behavior were the only significant multivariate predictors of intention to practice SSC in the future. Results suggest that shifting attitude and supporting more experience with the practice may increase nurses' implementation of SSC in the OR.

Acknowledgements

I would like to express my deepest gratitude to my supervisor Dr. Lynn Rempel for her patience, guidance, enthusiastic encouragement, and providing me with valuable and constructive feedback throughout my educational journey for the last three years. I appreciate her always helping me to focus my ideas, and sharing her expertise and knowledge with me. She has made this entire experience a memorable one. I could have not successfully completed my graduate studies without her dedication and support.

I would also like to thank my dedicated committee members Lynn McCleary and Madelyn Law for all of their commitment and useful constructive recommendations on this thesis project. They have both given me valuable support and encouragement throughout this whole process. I would also like to thank Sandra Dunn for taking the time to be the external examiner for this project.

Thank you to the many experts who have provided me with their feedback on the survey. I greatly appreciate all of them taking the time and contributing to this thesis project. I would also like to thank the managers involved in this project for allowing my survey to be distributed to staff on their unit, taking the time to assist with survey distribution and staff communication.

Most importantly none of this would have been possible without the love and patience of my entire family. Thank you to my parents for their encouragement and making me the person that I am today. To my in-laws, thank you for all of your support. To my loving husband, thank you for all the sacrifices you have made to help me reach my goals. Thank you to my nieces Amara, Taya and Anaya Dobosiewicz Onu whose births inspired me to focus on this area of research. I dedicate this thesis to my family.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

BFI	Baby Friendly Initiative
BFIO	Baby Friendly Initiative Ontario
KTA	Knowledge to Action
MSSC	Maternal Skin-to-Skin Contact
OR	Operating Room
PBC	Perceived Behavioral Control
RNAO	Registered Nurses Association of Ontario
SSC	Skin-to-Skin Contact
SN	Subjective Norm
TPB	Theory of Planned Behavior

Chapter 1: Introduction

Skin-to-skin contact (SSC) is the practice of placing a newborn naked or wearing a diaper and or cap in a prone position onto a mother's bare chest with a warm blanket placed across the newborn's back (Hung & Berg, 2011; Moore, Anderson, Bergman & Dowswell, 2012). SSC can be initiated immediately after delivery or at any point after birth. SSC is an internationally accepted practice with premature (Conde-Agudel, Diaz-Rossello & Belizan, 2003; Dodd, 2004; Ludington-Hoe, Morgan & Abouelfettoh, 2008; Ludington-Hoe & Swinth, 1996, Moore et al., 2012) and term newborns and infants (Bystrova et al., 2003; Bystrova et al., 2009; Carefoot, Williamson & Dickson, 2005; Ferber & Makhoul, 2004; Mikiel-Kostyra, Mazur & Boltruszko, 2002; Moore & Anderson, 2007; Moore et al., 2012). Intrapartum, post partum, special care nursery nurses, or midwives often assist the dyad to initiate and maintain MSSC (Chia, Sellick, & Gan, 2006; Dabrowski, 2007; Hung & Berg, 2011; Smith, Plaat, Fisk, 2008). Numerous organizations promote the practice of maternal skin-to-skin contact (MSSC) after vaginal and cesarean deliveries. Practice has changed to incorporate MSSC in the operating room (OR), but separation of mother and newborn is still fairly common (Crenshaw, 2007; Breastfeeding Committee for Canada, 2009; Dabrowski, 2007; Pound & Unger, 2012; Registered Nurses Association of Ontario, 2003; World Health Organization, 1998). This thesis study examined MSSC practices in the OR with mothers undergoing a healthy term scheduled elective (non-emergent/repeat/primary) cesarean delivery. This quantitative descriptive survey explored labour and delivery registered nurses' perceptions about facilitators and barriers to practicing MSSC in the OR using an electronic and paper copy descriptive survey.

Benefits of SSC

Dr. Edgar Rey, a pediatrician from Bogota, Columbia, originally established MSSC for preterm neonates in 1978. Initially termed Kangaroo Care, SSC was developed by Dr. Edgar Rey as he worked in a resource limited setting with inadequate access to incubators to maintain newborn temperatures (Tallandini, Huertas-Ceballos, & Genesoni, 2005). With the successes of SSC in the preterm population, the practice has been expanded to term newborns after vaginal and operative deliveries, using both maternal and paternal contact (Erlandsson, Dsilna, Fagerberg & Christensson, 2007; Hung & Berg, 2011; Smith et al., 2008; Velandia, Matthisen, Unvas-Moberg & Nissen, 2010; Velandia, Uvnas-Moberg & Nisssen, 2011; Young, 2011). Many studies evaluating the effectiveness of SSC focus primarily on dyads after vaginal deliveries, however there is less literature on MSSC in the OR. Moore et al. (2012) conducted a systematic review and meta-analysis concluding that overall SSC may have positive physiological and emotional benefits for mother and baby with no adverse effects.

Much of the SSC literature addresses possible breastfeeding outcomes (Carefoot et al., 2005; Gouchon et al., 2010; Mikiel-Kostyra et al., 2002; Moore & Anderson, 2007; Moore et al., 2012; Righard & Alade, 1990). Breastfeeding is widely referenced in the literature as the most optimal method for newborn nutrition, with many benefits to both mother and newborn (Pound & Unger, 2012; Smith, Moore & Peters, 2012). The systematic review by Moore et al. (2012) suggests MSSC has positive outcomes towards breastfeeding duration, but has no effects on breastfeeding initiation and exclusivity. The Academy of Breastfeeding Medicine Protocol Committee (ABMPC) (ABMPC, 2008; ABMPC, 2010), American Academy of Pediatrics (AAP), Expert Workgroup on Breastfeeding (EWB), American College of

Obstetrics and Gynecology (ACOG), International Lactation Consultant Association (ILCA), Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), WHO (Crenshaw, 2007), Breastfeeding Committee for Canada (BCC) (Breastfeeding Committee for Canada, 2009), Canadian Pediatric Society (CPS), Health Canada (HC), United Nations Children's Fund (UNICEF), and WHO are all organization recommending the practice of breastfeeding and newborn SSC after birth (Dabrowski, 2007; Pound & Unger, 2012; World Health Organization, 1998). The Neonatal Resuscitation Program endorsed by the Canadian Pediatric Society updated in 2011 also recommends the practice of MSSC with all newborns, even with meconium stained newborns that are vigorous after delivery (Phillips, 2013).

The Registered Nurses Association of Ontario (RNAO) (2003) suggests breastfeeding to be best practice. The importance of early contact and breastfeeding within the first two hours after birth is recommended in a guideline developed by WHO and UNICEF called the "Ten Steps to Successful Breastfeeding" (RNAO, 2003; WHO, 1998). WHO (1998) compiled a literature review called *Evidence for the Ten Steps to Successful Breastfeeding*. Step 4 of the ten steps recommends "helping mothers initiate breastfeeding within a half hour of birth" (WHO, 1998, p. 31). However, even though current recommendations and evidence support the practice of MSSC in the OR it is still not commonly practiced in every hospital (Hung & Berg, 2011; Rowe-Murray & Fischer, 2002; Chalmers et al., 2010; Stone, Prater, & Spencer, 2014).

Problem Identification

Cesarean births are an increasing trend especially in developed countries (Rowe-Murray & Fisher, 2002). The cesarean sections rate in Canada was 22.5% in 2001 to 2002 (Canadian Institute for Health Information, 2004). In Ontario, the total cesarean section rate

for 2005 to 2006 was 27.7%. The repeat cesarean section rate was at 85.1% for 2009 to 2010 and the primary cesarean section rate was 19.2% for 2009 to 2010. The primary cesarean section rate for women less than 35 years of age was 18.2% from 2009 to 2010 and for greater than 35 years of age was 23.1% for 2009 to 2010 (Canadian Institute for Health Information, 2013). As more women undergo cesarean sections, more women are not able to experience the normal events associated with the vaginal birthing process, which in healthy cases includes initiating MSSC sooner after birth (Chalmers et al., 2010). This decreases the amount of mothers and newborns being able to receive the benefits from immediate to very early MSSC after birth.

Cesarean section patients are less likely to initiate breastfeeding due to many barriers that these mothers face after an operative delivery (Crenshaw, 2007; Rowe-Murray & Fischer, 2002). The overall breastfeeding exclusivity rate in Ontario at three months is 52.5%; this number decreased at six months to 15.6% (Chalmers et al., 2009). Among mothers who had a cesarean section, 89.8% initiated breastfeeding compared to 90.5% of mothers who had a vaginal birth. At three months 46.3% of these mothers who had a cesarean section were exclusively breastfeeding; this decreased to 12.5% at six months post delivery. These statistics were typically lower compared to women who have undergone a vaginal delivery (Chalmers et al., 2009).

Separation of mother and baby after delivery is common practice with cesarean section patients, and can sometimes be considered as routine practice (Austin, 2013; Chalmers et al., 2010; Hung & Berg, 2011; Rowe-Murray & Fisher, 2001; Smith et al., 2008). Hung and Berg (2011) make reference to mothers being separated from their newborns for up to 90 minutes. In some extreme cases, separation can last up to 10 hours

depending on hospital practice (Rowe-Murray & Fisher, 2001). According to Righard and Alade (1990) these routines in practice affect the success of the first breast-feed.

According to a protocol by Montgomery, Hale and Academy of Breastfeeding Medicine Protocol Committee (2006) "separation of the mother and baby should be minimized and breastfeeding initiated as soon as feasible… the baby may go to the breast in the OR during abdominal closure with assistance to support the infant on the mothers chest… a mother may breastfeed postoperatively as soon as she is alert enough to hold the baby" (p. 273). Such protocols have influenced the practice of MSSC in the OR (ABMPC, 2010; Montgomery, Hale & ABMPC, 2006). The Global Criteria for the WHO/UNICEF Baby Friendly Hospital Initiative (1992) as cited in WHO (1998) states "at least 50% of mothers who have had cesarean deliveries should confirm that within a half hour of being able to respond, they were given their babies to hold within skin contact" (p. 31). If regional anesthesia has been provided to these cesarean section patients, they can usually respond immediately (Chalmers et al., 2010; Kuguoglu, Yildiz, Tanir & Demirbag, 2012; Rowe-Murray & Fisher, 2002; World Health Organization & Unicef, 2009; WHO, 1998), unlike mothers who had general anesthesia, which causes them to be unresponsive during the operation (Kuguoglu et al., 2012; WHO & UNICEF, 2009; WHO, 1998) and may take some time for them to become alert (Gonzales, 1990 as cited in WHO, 1998; Kuguoglu et al., 2012).

The literature indicates that patients and nurses desire to make SSC routine with cesarean patients in the OR as long as it is safe and if the patients are willing and responsive (Dabrowski, 2007; Hung & Berg, 2011; Smith et al., 2008; Zauderer & Goldman, 2012). According to the clinical coordinator of surgical services and maternal child services from

Sioux Look Out, MSSC in their OR was started due to a patient's expressed interest in having SSC in the OR as routine practice (Sioux Lookout Meno Ya Win Health Centre, 2013). Other hospitals have implemented MSSC in the OR because of the abundance of literature supporting SSC benefits (Brady, Bulpitt, Chiarelli & Shepard, 2013; Dabrowski, 2007; Fortin, 2012; Hung & Berg, 2011; Keller & Brenneman, 2012; McGill University Health Centre, 2013; Smith et al., 2008; Zauderer & Goldman, 2012). Therefore, the current trend is a change of routine OR practices to incorporate MSSC in the OR using evidence based practice (Dekker, 2012; Gouchon et al., 2010; Hung & Berg, 2011; Velandia et al., 2010; Velandia et al., 2011; Nolan & Lawrenece, 2009; Smith et al., 2008). However, MSSC in the OR is not commonly practiced in every hospital possibly due to barriers to practice. Although several authors have speculated about what these barriers might be, (Dabrowski, 2007; Dekker, 2012; Hung & Berg, 2011; Smith et al., 2008), these barriers have not been studied.

Some possible reasons why MSSC in the OR is uncommon include: safety concerns, maternal instability (e.g., nausea, vomiting) (Dabrowski, 2007; Smith et al., 2008), common routine practice of mother infant separation, workload issues (e.g., staffing) (Dekker, 2012; Hung & Berg, 2011; Smith et al., 2008), perception of cesarean being technologically driven and focused, minimal nursing support, inconsistent practice (Nolan & Lawrence, 2009), newborn instability (Gouchon et al., 2010; Nolan & Lawrence, 2009; Velandia et al., 2010), newborn admission to nursery (Nolan & Lawrence, 2009; Stevens et al., 2014), partner support (Velandia et al., 2010) and general anesthesia (Nolan & Lawrence, 2009). Studies have been conducted on barriers to practicing SSC with premature newborns in the Neonatal Intensive Care Unit (NICU) or Special Care Nurseries (Chia et al., 2006; Engler et al., 2002).

Implementation studies for the WHO (1998) "Ten Steps to Successful Breastfeeding" (Semenic, Childerhose, Lauziere & Groleau, 2012; Smith et al., 2012; Stikes & Barbier, 2013; Wallin, Rudberg & Gunningberg, 2005) have also identified barriers to SSC practice. In my practice as an obstetrical nurse, I have experienced barriers similar to those suggested by previous researchers when attempting to initiate MSSC in the OR.

Nurses who work in the obstetrical OR have a central role in the implementation of MSSC and could provide valuable insights that would address the gap in knowledge regarding the barriers to practicing MSSC in the OR. Thus, this thesis examined Registered Nurses' (RNs) perceptions about facilitators and barriers to practice. Assessing the facilitators and barriers to practice is an important step in the knowledge to action (KTA) process (Graham et al., 2007). Two theories were chosen to help guide the literature search, understand the behavioral concept of MSSC, create the methodology, and guide the results and discussion of this study.

Theoretical Underpinnings

Common themes throughout this literature review about practicing MSSC in the OR reflect components of two theories, the theory of planned behavior (TPB) (Ajzen, 1991; Ajzen, 2011), and the KTA framework (Graham et al., 2007). These two theories can assist in understanding the factors that may facilitate and inhibit the initiation of MSSC in the OR.

The KTA framework is a theory that identifies the steps involved in knowledge creation, translation, dissemination and action in order to enhance health (Graham et al., 2007). The two processes include knowledge creation and action. This study obtained information important for the action process of this theory. The action process includes the steps needed to translate knowledge into practice. Figure 1 contains a detailed diagram of the

phases of KTA.

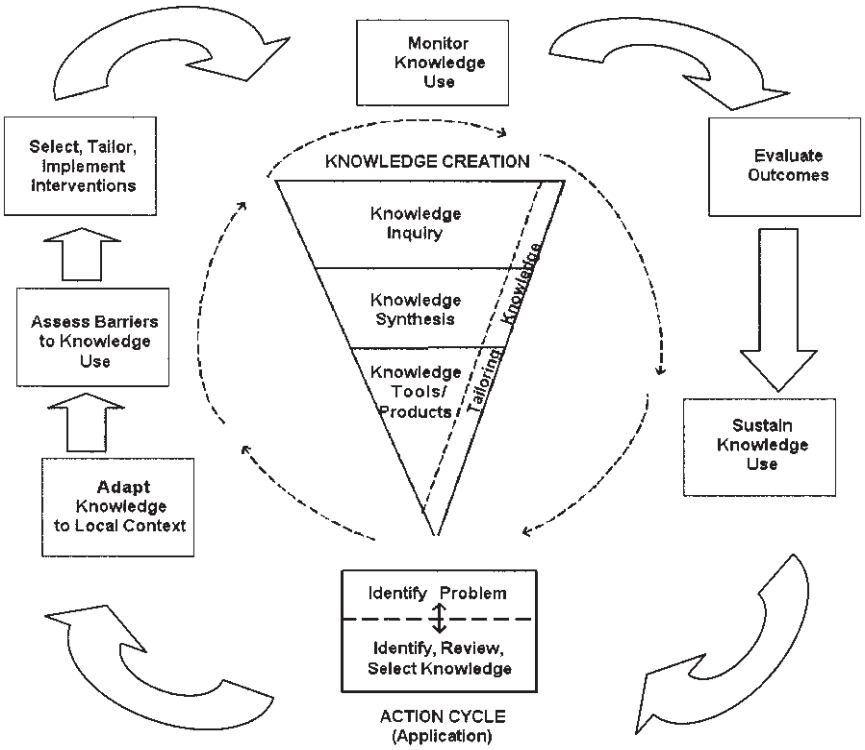

Figure 1. KTA Diagram (Graham et al., 2007, p. 19)

KTA indicates that it is important to assess the barriers to knowledge use in order to tailor interventions to address the barriers to practice. Thus, this study was conducted to identify the facilitators and barriers to knowledge use about MSSC in the OR in order to suggest tailored recommendations to facilitate future practice. However, the KTA framework does not specify how attitude, beliefs and perceptions influence someone's intention to perform the behavior of MSSC in the OR. Therefore, another theory was chosen to help guide the exploration and understanding of these topics. The TPB uses concepts of behavioral beliefs, normative beliefs, and control beliefs that individually influence their associated concepts of attitude, subjective norm (SN), and perceived behavioral control (PBC) to determine the intention of someone to perform a health behavior (see Figure 2) (Ajzen, 1991; Ajzen, 2011).

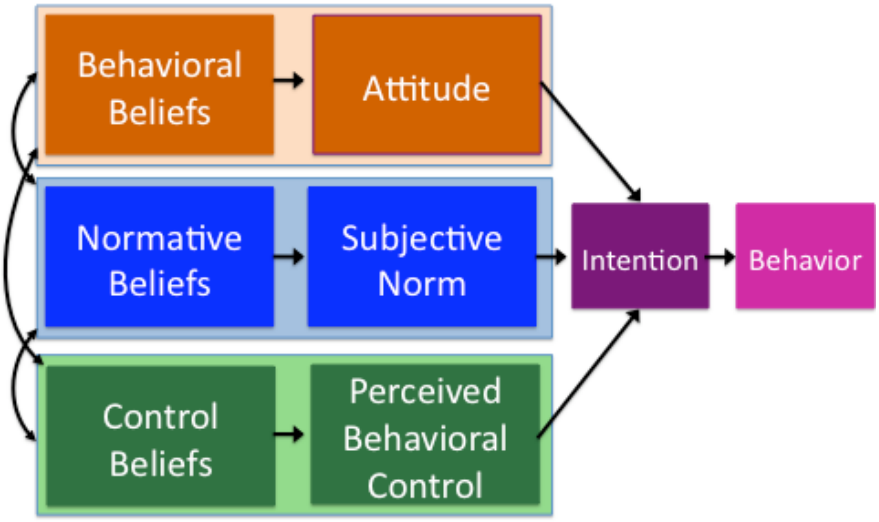

Figure 2. Theory of Planned Behavior (Ajzen, 1991; Ajzen, 2011)

Both of these theories helped to guide this research exploring RNs' perceptions about barriers and facilitators to MSSC in the OR. This study is important, as it will increase the maternal child health practice and research communities' knowledge about facilitators and barriers to MSSC practices in the OR. This research will contribute to nursing knowledge and management of SSC programs, nursing education about MSSC, interprofessional collaboration regarding implementation of MSSC, knowledge about MSSC safety, environmental constraints limiting the practice of MSSC, and the feasibility of MSSC implementation in the OR. Thus, this research has many implications for research, clinical practice and education.

Chapter 2: Literature Review

An overview of the literature (Grant & Booth, 2009) was conducted to obtain a summary of past and recent information available regarding the advantages and disadvantages to MSSC with both vaginal and cesarean deliveries, the recommendations to practicing MSSC, the overall implementation of MSSC in the OR, and facilitators and barriers regarding MSSC in the OR. Theoretical frameworks were also examined to determine which would best fit the proposed study. No appraisal of the literature was conducted, since the objective was to an overview of the literature currently present to support the rationale for this study and to obtain information regarding any facilitators and barriers to MSSC in the OR. Personal experiences with the practice of MSSC in the OR also helped to determine which literature to include in this review.

The following databases were used for the literature search: CINAHL, Google, Google Scholar, Medline, OvidSP, ProQuest, PsycInfo, PubMed, Scholars Portal, and Supersearch Beta. Some of the literature search was also completed using organizational websites such as: American College of Obstetrics Gynecology; Breastfeeding Committee for Canada; California Department of Public Health; Canadian Pediatric Society; Health Canada; National Guideline Clearinghouse; Niagara Region Public Health; Public Health Agency of Canada; Registered Nursing Association of Ontario; Society of Obstetricians and Gynecologists Canada; United Nations Children's Fund; and the World Health Organization. Additional literature was identified through the reference lists from the articles obtained through the search strategy. The literature searched had no limitations on the years of when the information was published. Articles that were found and included in this thesis document ranged from the year 1985 to 2015.

The beginning of the general literature search for this study was focused on current articles that had a combination of the following key words: breastfeeding, benefits, advantage*, kangaroo care, early skin to skin, cesarean section, operating room, quality improvement, SSC, maternal skin-to-skin contact/care, randomized controlled trials, baby friendly hospital initiative, research, perceptions, barriers, obstacles, implement*, time, improv*, efficacy, bonding and problems. This literature also elicited information on the advantages of SSC. The word kangaroo care was also used interchangeably with skin-to-skin care/contact. When searching within the selected databases the use of the Boolean operators 'and' and 'or' were used consistently to help broaden and narrow the search. Skin to skin/ skin-to-skin was also used as a key word with and without dashes to see if more results would be elicited.

Searches specifically for current disadvantages of SSC included the following key words linked with the word SSC: nosocomial infection, disadvantages, contraindications, contraindicating evidence, complications, bad, unfavorable, damage, harm, injury, prejudice, con, distress, obstacles, barriers, challenges, concerns. All of the literature found through this literature review discussed SSC as being beneficial.

A search for recommendations on SSC practices included the following key words in conjunction with SSC: Public Health Agency of Canada; Health Canada; WHO; United Nations Children's Fund; Society of Obstetrics and Gynecology; American Society of Obstetrics and Gynecology; Society of Obstetrics and Gynecology Canada; Canadian Pediatric Society; and, American Pediatric Society and Breastfeeding Committee Canada. Other key words included: uninterrupted/immediate SSC in the operating room, facilitators to practicing SSC in the operative room, practice change projects about SSC in the operating

room, and midwives and SSC in the operating room. The key word operating room was also interchanged with perioperative suite.

A search specifically for SSC in the OR included the following key words with SSC: in the operating room, operating room theater, cesarean section, operative delivery, immediate, elective cesarean section, tactile contact between newborn and mother after cesarean section, decreased newborn separation and decreased maternal infant separation. SSC in the OR was also linked with certain general literature search key words as well. The table of contents of journals such as Birth, Maternal Child Nursing, Maternal and Child Nutrition, Midwifery, Nursing for Women's Health, JOGNN, and the Journal of Human Lactation were read searching for key terms. The reference lists on all the SSC in OR literature was also examined to identify additional articles. One specific article by Hung and Berg (2011) was a foundational article that set off the rest of the literature search. Communication with authors of selected studies on SSC in the OR was also completed through conference attendance and email contact.

A search for recommendations on SSC practices included the following key words in conjunction with SSC: Public Health Agency of Canada; Health Canada; WHO; United Nations Children's Fund; Society of Obstetrics and Gynecology; American Society of Obstetrics and Gynecology; Society of Obstetrics and Gynecology Canada; Canadian Pediatric Society; and, American Pediatric Society and Breastfeeding Committee Canada. Other key words included: uninterrupted/immediate SSC in the operating room, facilitators to practicing SSC in the operative room, practice change projects about SSC in the operating room, and midwives and SSC in the operating room. The key word operating room was also interchanged with perioperative suite.

A search specifically for facilitators and barriers to SSC and perceptions for this intervention included the following key words linked with SSC practices: nursing perceptions, nursing perceptions within operating room, operating room, barriers in operating room, challenges to newborn. Other key words and phrases used included: barriers, challeng*, obstacles, ideas, perceptions, health care perceptions, perceptions of barriers to skin to skin implementation in the operating room, barriers to SSC in the operating room, barriers to kangaroo care in the operating room, obstacles to kangaroo care in operating room, attitudes, opinions, nursing attitudes and kangaroo care and cesarean section barriers to kangaroo care. Barriers to baby friendly implementation were also reviewed to see if any barriers with implementing this practice could be linked to SSC in the OR. Key words used included: barriers to baby friendly, baby friendly implementation, and organizational change. During attendance at a Baby Friendly Initiative (BFI) conference, this researcher also communicated with registered nurses, lactation consultants and a manager to get perceptions regarding their facilitators and barriers to implementing SSC in the OR.

Specific inclusion and exclusion criteria were used when deciding on the literature use to identify facilitators and barriers to MSSC in the OR. Inclusion criteria included literature that mentioned facilitators and barrier regarding MSSC within the OR, NICU and labour and delivery units. Exclusion criteria included literature that did not discuss MSSC facilitators and barriers to practice. Randomized controlled trials were viewed and exclusion criteria for these studies were used as examples of barriers to MSSC in the OR.

A search for theoretical frameworks included the following key words: nursing theories, theory of planned behavior, knowledge to action, health promotion model, nursing attitudes, nursing perceptions, SSC implementation theories, theories for SSC, theories on

attitudes and beliefs. Some information on these theories was also obtained from textbooks.

All of the words chosen to search for this literature were either seen in the SSC literature, were synonyms of other words, or were recommended as search words by my supervisor. No language restrictions were applied at the beginning of the literature search; although some articles found were unable to be fully translated therefore the literature search was narrowed to English only. Articles that included premature infants were included in this literature review due to the valuable information found pertaining to SSC benefits, barriers and facilitators. Therefore, the literature review for this thesis was very diverse since there were no articles found to this researchers knowledge that were specifically about this topic.

The following areas will be further discussed with supporting literature on SSC; maternal connection/attachment and emotional response, breastfeeding and physiological effects, implementing SSC in the OR, facilitators and barriers to practice and theoretical underpinnings.

Maternal Connection/Attachment and Emotional Response

Bonding is an emotion or feeling of attachment between parents and the newborn. SSC, which can increase bonding, can be beneficial for both mothers who are breastfeeding and bottle-feeding. Moore et al. (2012) theoretically suggested bonding as an evolutionary response due to mothers in the past needing to protect their infants from predators and provide a high level of parental care for newborn survival. Bystrova et al. (2003 as cited in Moore et al., 2012) suggested mothers who provided SSC after birth showed more caring characteristics towards their newborns than mothers of newborns who were separated for the first two hours after birth. Mutual reciprocity between mother and infant measured at 12 months post birth was significantly stronger for mothers who were provided SSC after birth;

this was a significant result in the Moore et al. (2012) meta-analysis. This means SSC after birth potentially has long-term positive effects on mother and newborn interactions, which has implications on the mother and newborn relationship, which affects newborn development (Bystrova et al., 2003; Bystrova et al., 2009).

Moore et al. (2012) suggest that some studies have shown significant effects of SSC on bonding while other studies have not found bonding effects. Lack of randomized controlled trail evidence measuring bonding and maternal attachment may account for the lack of consistency. The systematic review by Moore et al. (2012) found few randomized controlled trials that had good methodological quality. Despite the lack of strong evidence from randomized controlled trials about effects of SSC on maternal bonding, a number of studies indicate positive maternal emotional benefits of SSC. Therefore, other types of literature were reviewed to further examine effects of MSSC on bonding.

A prospective longitudinal study conducted by Rowe-Murray and Fisher (2001) explored whether there is an impact on mother infant contact and emotional well being with respect to mode of delivery. This study was conducted on 203 primiparous women who delivered by spontaneous vaginal delivery, cesarean section and with instrumental assistance. The authors suggested that there might be a relationship between maternal emotional status and infant contact with all modes of deliveries (Rowe-Murray & Fisher, 2001). The results indicate that holding their babies sooner is more important to mothers than holding their babies for a longer period of time. Overall, this study suggests that early newborn and maternal contact has a positive effect on mothers' early postpartum mood (Rowe-Murray & Fisher, 2001).

Increased patient satisfaction was seen within a randomized controlled trial by

Carefoot et al. (2005) on healthy full term infants to examine MSSC and breastfeeding. Larger portions of mothers were very satisfied with MSSC – 90% compared to 59% of the mothers in the control group that had routine care. Approximately 86% of mothers in the intervention group (immediate SSC after spontaneous vaginal delivery) said they would prefer the same type of care in the future (Carefoot et al., 2005).

A mother having an elective cesarean section can be affected psychologically due to the inability for the mother to deliver vaginally. A qualitative study by Bayes, Fenwick and Huack (2012) discussed mothers' experiences about medically necessary cesarean sections and also explained the feelings and emotions that mothers go through during the delivery process (Bayes et al., 2012). Reasons for the increased cesarean section rates may be due to previous cesarean sections (Zanardo et al., 2010); patients may also request to have a cesarean section done electively. The experience of giving birth is an event that only occurs a few times in a woman's life and is a crucial moment that most women tend to remember with much clarity. Many health professionals agree that this experience should always be a positive one. Bayes et al. (2012) uncovered negative maternal emotions from women undergoing elective cesarean sections that suggested a negative birthing experience for these women. Women in the study talked about "missing, or having lost part in their family story" and "the lost moment of (her baby's) life that we can never get back" (Bayes et al., 2012, p. e905). Bayes et al. (2012) suggested that early continual maternal contact after birth is necessary even after having a cesarean section and mothers should be involved throughout the procedure. These authors also suggested hospital policies should reflect the ability of mothers to take up their maternal role within the OR. Decreasing the separation between mother and newborn after birth was suggested to help establish the mother's sense of

acknowledgement (Bayes et al., 2012). Evidence suggests that mothers undergoing a cesarean section tend to be less satisfied with their birthing experience than mothers who deliver vaginally (Smith et al., 2008). Zauderer and Goldman (2012) studied cesarean section mothers' perceptions about MSSC benefits and found that MSSC reduced maternal anxiety, increased trust in nurses and improved satisfaction with the birthing experience.

Chalmers et al. (2010) conducted a survey with 8,244 randomly selected mothers through a Canadian Census done in May 2006; the total completed results included 6,421 women. Within the first hour after vaginal delivery 98.4% of mothers held their babies for the first time compared to only 61.9% of cesarean deliveries. Chalmers et al. (2010) also suggested that fewer cesarean section mothers held their babies less at five minutes and within one hour of age compared to vaginal deliveries, and cesarean section patients also stated they held their babies too late. Mothers having a cesarean section were less likely to hold their newborns in SSC during the first contact (11.3%) compared to vaginal deliveries (59.6%) (Chalmers et al., 2010). Cesarean section mothers also rated their experience of labour lower compared to vaginal deliveries. Chalmers et al. (2010) suggested that the practices after a cesarean section delivery should be re-evaluated to potentially make every mother's birthing experience similar in regards to maternal infant contact and experience regardless of the method of delivery.

A study by Zanardo et al. (2010) suggested that bonding delays also occur after having a cesarean section. A discussion article by Hofer (2006) makes reference to a psychobiological root of early attachment. This author suggests a "biphasic protest-despair response" as a concept where the bond between mother and infant is broken and the newborn calls/searches for their mother (p. 85). This was seen in a study by Christensson, Cabrera,

Christensson, Unvas-Moberg and Winberg (1995) and is termed the "separation distress call" (p. 471). Christensson et al. (1995) noted that babies placed in SSC for 90 minutes with mother had almost no crying while babies placed in a cot cried in short pulses throughout the night. Hofer (2006) references Bowlby (1982), suggesting that after the bond is broken, newborns may conceivably go through anxiety and depression. The pathophysiological concept of separation between mother and infant is also described by Hofer (2006), which shows that separation causes a loss of regulatory interactions. This suggests that there is theoretically the potential for harmful events to occur after the separation between mother and newborn, and that it is best to keep them together.

Velandia et al. (2010) is a study similar to Velandia et al. (2011). The sample included 37 healthy infants born by primary elective cesarean section (Velandia et al., 2010). SSC was initiated immediately after cesarean delivery. Velandia et al. (2010) found that newborns cried more when in SSC with their mother, but this was hypothesized to occur due to the smell of the antiseptic used prior to the operation. It was also found that mothers and fathers communicated more and earlier with the newborn when in SSC. Vocal interactions with the newborn may have an effect on the bonding and or attachment that occurs while newborns are placed in SSC. Both parents interacted and spoke with their newborn post delivery while in SSC, and researchers found this encouraged newborns to solicit calls back to their parents (Velandia et al., 2010). This study found SSC helped to encourage the onset of initial vocal communication between parents and newborn, which can potentially have an influence on the newborns' cognitive development. The act of SSC immediately after cesarean section with the mother has also been suggested to promote maternal and newborn visual and emotional interaction such as smiling, therefore potentially adding to the bonding

process (Velandia et al., 2010).

Velandia et al. (2011) performed a study to determine newborn breastfeeding and crying behaviors while in SSC with either their mother or father after a cesarean section. Newborns were randomized to receive SSC with either their mother or father. This study included 20 newborn girls and 17 newborn boys (Velandia et al., 2011). The results suggested that behaviors that occurred between the mothers and fathers such as kissing and smiling might play a role in the bonding and attachment process. The vocalization between newborn and parents was also discussed to be potentially as important as touch to "neuroendocrine mechanisms involved in the regulation of social bonding in humans" (Seltzer, Ziegler & Pollak, 2010, as cited in Velandia et al., 2011, p. 365). Tactile contact is hypothesized to assist in feelings of love, parental sensitivity and responsiveness to newborn cues, which may indicate attachment (Grossmann, Than & Grossmann, 1981 as cited in Velandia et al., 2011). Hofer (2006) also makes note of the importance of touch, warmth and smell for both humans and animals. Velandia et al. (2011) noted that mothers touched their infants more than fathers in SSC after a cesarean section, possibly enhancing mother and newborn bonding and attachment.

A more recent longitudinal quasi-experiment completed by Bigelow, Power, MacLellan-Peters, Alex, and McDonald (2012) with term newborns suggested that MSSC might reduce postpartum depression. This study revealed that MSSC lessened self-reported depressive symptoms and mothers' salivary cortisol levels in the MSSC group were lower at one month when compared to the control (Bigelow et al., 2012). Therefore, the review of the literature indicates that MSSC may influence maternal attachment and emotional response in the cesarean section patient population.

Physiological Effects of SSC

Systematic reviews have indicated that there are no short or long term negative effects of SSC (Anderson, Moore, Hepworth, & Bergman, 2004; Moore, Anderson, & Bergman, 2007; Moore et al., 2012). However, several physiological benefits of SSC have been identified.

Moore et al. (2012) conducted the largest systematic review on SSC. It reviewed a total of 34 randomized controlled trials that include 2,177 mother infant pairs. SSC was determined to have many physiological benefits for both mother and infant. Primary outcomes evaluated in Moore et al. (2012) included maternal breastfeeding rates/duration and infant physiological stability and thermoregulation. Secondary outcomes included maternal breastfeeding outcomes, breast temperature, breast problems and post-operative pain. Infant secondary outcomes included: heart rate and respiratory rate, NICU admissions, body weight change and crying/behavior. Moore et al. (2012) warned readers to treat the results with caution, due to the considerably high heterogeneity in the individual studies and small sample size. There were few studies grouped together to meta-analyze, for this reason.

Moore et al. (2012) found that newborns in SSC had significantly higher blood sugars of 10.56 mg/dL than the control infants. They also found that infants in SSC cried significantly less than the control infants. According to Anderson (1989 as cited in Moore et al., 2012), "maternal-infant separation is associated with excessive infant crying and can be harmful because crying re-establishes portions of the fetal circulation" (p. 20). Crying has a negative effect on newborn circulation, which causes hypothermia, wastes calories meant for growth, affects the closure of the foramen ovale after birth and increases intracranial hemorrhage and pressure. This is seen with preterm infants; the effects of crying on term

infants are currently unknown (Anderson, 1989, as cited in Moore et al., 2012). A decreased pain response for newborns in SSC was noted as almost significant. Positive affects of SSC on neurobehavioral responses have also been suggested in some studies (Bystrova et al., 2003; Ferber & Makhoul, 2004).

Moore et al. (2012) suggested that some physiological outcomes for healthy full term infants are debatable. Minimal differences were found regarding newborns heart rate, respiratory rate and temperature in SSC compared to the control. The types of measurements and instruments used as well as the small sample sizes in the studies may account for the debatable results.

Moore et al. (2012) reviewed literature on maternal benefits attributed from SSC. These included: reduced anxiety (Nolan & Lawrence, 2009), less post operative pain (Huang, 2006; Nolan & Lawrence, 2009), decreased breast engorgement pain (Bystrova et al., 2003), reduced risk of postpartum hemorrhage (Dordevic, 2008), and faster delivery time for the placenta (Marin, 2010).

Breastfeeding Effects of SSC

Breastfeeding rates and duration were deemed among the most clinically significant findings in the meta-analysis. Thirteen studies measuring breastfeeding rates examined at one to four months were included in the meta-analysis (Moore et al., 2012). Moore et al. (2012) found no difference in initiation of breastfeeding or exclusivity at hospital discharge between SSC groups and controls but did find a statistical effect on breastfeeding duration. The relative risk of still breastfeeding at one to four months was higher in SSC groups than the control groups. Only two studies were statistically significant on their own, however, when all 13 studies were included in the meta-analysis, the overall relative risk of still

breastfeeding was significant (Moore et al., 2012). Similarly, seven studies measuring breastfeeding duration were meta-analyzed. Moore et al. (2012) found infants placed in MSSC breastfed an average of 42.55 days longer than the control group, which did not receive any SSC. The findings of one study were inconsistent with this overall result. Sosa (1976a, as cited in Moore et al., 2012) found that control infants' breastfed longer. When this inconsistent study was removed, the difference in average duration increased to 64 days and became statistically significant.

A study by Windstrom et al. (2011), included within the systematic review, suggested that there are nine phases that a full term newborn goes through unaided after coming into SSC with their mother immediately after birth. These phases include: birth cry, relaxation, awakening, active, crawling, resting, familiarization, suckling and sleep. Windstrom et al. (2011) also suggested that all of the nine phases are important for the baby to go through to initiate breastfeeding, self regulate, and facilitate maternal attachment. Newborns will localize the nipple by smell and odor cues within the first few hours of birth (Moore et al., 2012). SSC immediately after birth is suggested to cause more tactile, odor and thermal cues for babies than when babies are swaddled. After two hours, newborns become drowsy and difficult to arouse since they go into their sleep state, therefore suggesting the importance of immediate MSSC in order to initiate breastfeeding before the nine phases have been fulfilled (Windstrom et al., 2011). The literature refers to this two-hour period as a 'sensitive period' for breastfeeding (Anderson et al., 2004; Moore & Anderson, 2007; Moore et al., 2007; Moore et al., 2012; Windstrom et al., 2011). Moore et al. (2012) suggested that infants allowed SSC immediately and left uninterrupted might have better breastfeeding outcomes.

The average duration of SSC within the studies reviewed by Moore et al. (2012)

ranged from 15 minutes to a mean of 37 minutes of continuous SSC within the first 48 hours (Moore et al., 2012). Within 18 of the 34 studies, SSC was initiated at zero to 15 minutes postpartum. It is likely that there may be a dose response to SSC, such that mothers who hold their infants earlier or for longer periods will have more positive outcomes. Bramson et al. (2010) examined SSC dose response relationship in a prospective cohort study with a total of 21,842 mother-infant dyads. This study suggested that longer and earlier SSC increased breastfeeding exclusivity in hospital, and decreased hospital stay (Bramson et al., 2010). Newborns in SSC that were healthy, and non-medicated were most effective with breastfeeding after birth (Rowe-Murray & Fischer, 2001). This suggests the need for longer SSC for mothers after cesarean section due to maternal and newborn medication withdrawal. Velandia et al. (2011) also suggested that immediate SSC with mother rather than father after a cesarean section allowed mothers to breastfeed sooner (Velandia et al., 2011). Despite these interesting findings, Moore et al. (2012) state that there are too few studies measuring the dose response effect of SSC to support a dose-response effect.

Zanardo et al. (2010) conducted telephone interviews with 1,567 mothers to explore differences in breastfeeding rates dependent on the mode of delivery with term newborns. Elective cesarean sections were typically completed at an earlier gestation than emergency cesarean sections. The birth weights were also lower with elective cesareans rather than emergency cesareans (Zanardo et al., 2010). The study suggested no difference in breastfeeding rates between elective and emergency cesarean sections. Vaginal deliveries however, were associated with higher breastfeeding rates and shorter intervals to breastfeeding initiation (Zanardo et al., 2010). Other findings associated with lower breastfeeding rates with cesarean section patients as suggested by Zanardo et al. (2010)

included postpartum pain, and the fact that bottle feeding is a common practice with cesarean section patients, which has an effect on the frequency of feeds, ultimately effecting lactogenesis and mothers' confidence to breastfeed. Zanardo et al. (2010) suggested that the health status of elective cesarean section patients should not affect patients' breastfeeding success since this procedure is usually performed due to a non-medical reason. The lack of assistance was mentioned as a barrier to breastfeeding, suggesting the role of the nurse to be an important component to breastfeeding success (Zanardo et al., 2010).

Implementing SSC in the OR

According to the literature infants do not need to be separated for long periods of time from their mothers and MSSC can be implemented within the OR (Brady, Bullpitt, & Chiarelli, 2014; Dabrowski, 2007; Dekker, 2012; Hung & Berg, 2011; Magee, Battle, Morton & Nothnagle, 2014; Smith et al., 2008; Stone et al., 2014; Velandia et al., 2010; Velandia et al., 2011). A quality improvement project (Hung & Berg, 2011) and practice change projects (Brady et al., 2014; Brady et al., 2013; Dabrowski, 2007; Keller & Brenneman, 2012; Magee et al., 2014; Fortin, 2012; Smith et al., 2008; Stone et al., 2014; Zauderer & Goldman, 2012) have shown the feasibility of implementing SSC post operatively.

Hung and Berg (2011) conducted a quality improvement study to improve breastfeeding initiation rates amongst mothers undergoing a cesarean section by initiating MSSC in the OR. This project increased MSSC in OR practice from 20% to 68%. The proportion of infants who did not receive MSSC after 4 hours was decreased from 40% to 9%. Formula supplementation in hospital was decreased from 42% to 33% (Hung & Berg, 2011).

Nolan and Lawrence (2009) performed a study called the Nursing Intervention to

Minimize-Maternal Infant Separation (NIMS), which was a pilot protocol instituted to minimize maternal-infant separation after cesarean section procedures. This study was a randomized controlled trial involving 50 women having a repeat singleton cesarean delivery with term newborns. The intervention group received the NIMS protocol while the control received routine care (Nolan & Lawrence, 2009). The NIMS protocol was expected to decrease maternal anxiety and pain, allow for a more positive perception of birth, increase newborn temperature, lower stress and increase the duration of breastfeeding (Nolan & Lawrence, 2009). However, the only significant results were decreased newborn respiratory rates and higher salivary cortisol levels. This protocol included initiating SSC for a minimum of 10 to 15 minutes in the recovery room. The mothers selected to be in the NIMS group were always in close proximity and able to always maintain eye contact with their newborn. Nausea and vomiting after the procedure posed as a barrier to implementing some of the study interventions such as required cheek-to-cheek contact for three minutes in three of the participants (Nolan & Lawrence, 2009). Other limitations to following this protocol included: mothers having unplanned general anesthesia, newborn complications and staffing issues (e.g. unit being short staffed) (Nolan & Lawrence, 2009). Even though SSC was not initiated in the OR, the outlined protocol demonstrates the feasibility of SSC practice based on a policy and procedure.

A qualitative focus group study by Wallin et al. (2005) provided descriptions regarding nursing staff perceptions about barriers and facilitators to SSC implementation in Sweden. This study involved four hospital NICU units that were randomized to intervention and control. The main purpose was to determine if an external facilitator would help with kangaroo care guideline implementation. Two intervention hospitals (I1, I2) received a guide

(external facilitator) to help implement the guidelines, and two control hospitals (C1, C2) were only provided with the guidelines to implementation (Wallin et al., 2005). This study found that the guidelines improved practice although; there was no difference in SSC implementation in the neonatal units with or without an external facilitator.

Gouchon et al. (2010) implemented SSC in the OR recovery room. According to Gouchon et al. (2010) one concern about SSC in the OR is that low temperatures within the OR, low maternal temperature and anesthesia might affect newborn thermoregulation. Placing babies under a warmer immediately after cesarean delivery is a common practice on some labour and delivery units. A study by Bergman, Linley, and Fawcus (2004) suggested preterm infants had better thermoregulation in SSC than in incubators, suggesting benefits for newborn thermoregulation. Gouchon et al. (2010) performed a randomized controlled trial on cesarean section mother infant dyads and observed maternal and newborns temperatures for two hours after the mother's arrival from the OR. The time between delivery and SSC was on average 51 minutes. The distance between ORs and obstetrical complications were suggested to account for the long duration of separation after delivery (Gouchon et al., 2010). SSC was done with 17 mother infant dyads, and the control group of 17 mother infant dyads received routine care. Newborn temperature was measured after delivery, after the newborns' bath, and then every 30 minutes until two hours after delivery (Gouchon et al., 2010). The results from this study suggested no differences between the groups; this was suggested possibly due to the small sample size. Maternal level of satisfaction was high in this study suggesting that the separation time between the mother and newborn did not effect these women's satisfaction. This study suggested the safe practice of SSC since no decrease in newborn temperatures was found while in SSC.

Facilitators, Barriers and Perceptions of SSC

MSSC in the OR is a relatively recent practice and literature on barriers and facilitators to MSSC in the OR is limited. The literature search for this thesis found no specific studies on nursing perceptions about facilitators and barriers to MSSC practice in the OR. Thus, this review examined studies about nurses' perceptions regarding facilitators and barriers of SSC in the NICU (Chia et al., 2006; Engler et al., 2002;Wallin et al., 2005) and labour and delivery units (Byaruhanga et al., 2008; Carefoot et al., 2005; McKeever & St. Fleur, 2012; Semenic et al., 2012; Stikes & Barbier, 2013). In addition, this review identifies the possible facilitators and barriers suggested by practitioners writing about the practice of MSSC in the OR. Bayes et al. (2012) suggested that further research should be invested into the professional and organizational barriers and facilitators to practicing SSC in the OR. Both nursing perceptions and patient perceptions regarding SSC and facilitators and barriers to practice were reviewed.

Beliefs Regarding Benefits of SSC

Nurses believed there were many beneficial outcomes to MSSC. Nurses' overall attitude about SSC has been shown across the literature to be positive; this positive attitude has helped facilitate practice change (Chia et al., 2006; Engler et al., 2002; Semenic et al., 2012; Wallin et al., 2005). Chia et al., (2006) conducted a study examining nursing attitudes regarding the practice of SSC in the NICU. A total of 34 nurses in Melbourne Australia completed a descriptive survey and four nurses were asked to follow up with an in-depth interview. According to Chia et al. (2006), nurses' perceived a sense of fulfillment when helping parents to provide SSC but expected parents to request SSC. Nurses who participated in Chia et al.'s study noticed an improvement in parent confidence and bonding,

physiological benefits for infants (decreased crying), maternal benefits of decreased patient anxiety, increased patient satisfaction and improved milk supply. Nurses also believed SSC with preterm newborns had an effect on improved milk supply but were uncertain if SSC truly had a positive milk supply outcome (Chia et al., 2006).

Some nurses may not believe SSC is a valuable practice; Engler et al. (2002) suggested this belief might cause reluctance to practice. Dabrowski (2007) suggested nursing staff were resistant and felt uncomfortable with immediate MSSC after cesarean birth, due to concerns about newborn thermoregulation and time constraints with completing routine procedures. Nurses concern about newborn thermoregulation was also an issue suggested in the literature (McKeever & St. Fleur, 2012; Moore et al., 2012; Rowe-Murray & Fisher, 2002; Semenic et al., 2012). According to Zwedeberg et al. (2015) midwives who participated in a qualitative study identified concerns about the newborns safety due to mothers' sedation level post cesarean.

Further behavioral beliefs causing barriers to practice included: nurses not wanting mothers to feel guilty about their feeding choice making it uncomfortable for them to promote breastfeeding (Semenic et al., 2012); nurses' felt they were too busy (Chia et al., 2006; Semenic et al., 2012) or too stressed to provide support (Semenic et al., 2012); nurses perceived a lack of privacy, and due to the patient's cultural background nurses felt reluctant to practice SSC (Moore et al., 2012).

A literature review by Semenic et al. (2012) suggests lack of knowledge or skill to be barriers to practice implementation. Wallin et al. (2005) also mentioned that minimal nursing research awareness and skills were barriers to practice. Instead of following guidelines, some nurses tended to follow their own practice and provide individualized patient care. However,

availability and access to literature was suggested as a facilitator to practice.

Information from the literature suggests mothers were being provided with inconsistent health teaching about SSC (Zwedeberg, et al. 2015), causing a barrier to practice. Maternal beliefs might also hinder nursing practice. One qualitative study by Byaruhanga, Bergstrom, Tibemanya, Nakitto and Okong (2008) explained mothers' attitude, knowledge, practices and beliefs regarding MSSC. Mothers viewed that the vernix caseosa and mixture of amniotic fluid seemed dirty (Byaruhanga et al., 2008). From my experience some mothers after delivery express the baby's need to be cleaned immediately before performing MSSC. Therefore concern about cleanliness can potentially be a barrier to SSC, due to the mother's perception of what is considered "clean"

Normative Beliefs

Information in the literature suggests that support from other health care team members facilitates the practice of SSC. Wallin et al. (2005) suggested managers have a large role towards changing practice and their involvement, facilitation and feedback may also play an important role towards implementing SSC in the OR. Managerial support was suggested as a facilitator to practice (Semenic et al., 2012; Wallin et al., 2005). One participant in the study by Wallin et al. (2005) suggested the manager "…trusts us and supports us in what we are doing. It is important that you have someone trustworthy to talk things over with" (Wallin et al., 2005, p. 69).

There is evidence that other health care providers beliefs and behaviors may also affect the practice of MSSC. Dabrowski (2007) suggests anesthesiologists and neonatologists initially resisted this practice change regarding immediate MSSC in the OR, although agreed to a pilot. However, once all staff concerns were met all health care providers encouraged the

practice. Stone et al. (2014) expressed that obstetricians were already supportive of the practice, whereas in Brady et al. (2014) obstetricians were concerned about maintaining aseptic technique and initially resisted the practice. Zwedeberg et al. (2015) suggests poor collaboration amongst other health care professionals as a barrier to practice. Brady et al. (2014), Dabrowski (2007), and Stone et al. (2014) explained that the collaboration amongst health care team members regarding adjustments to the practice of MSSC in the OR in order to limit their actual or perceived barriers to practice facilitated the practice. Semenic et al. (2012) also suggested interprofessional collaboration might assist with BFI implementation.

According to Wallin et al. (2005) physicians' collaboration with nurses was noted to strengthen the team as a unit when benefits of SSC were being expressed directly to the patient. Another barrier to implementing MSSC practice in the OR not clearly mentioned in other pieces of literature includes lack of communication amongst staff (Hung & Berg, 2011; Stone et al., 2014; Zwedeberg et al., 2015).

Changing organizational culture was suggested as a facilitator to practice (Semenic et al., 2012). Wallin et al. (2005) suggests change in unit cultures, and positive attitudes may facilitate the practice of SSC, whereas negative attitudes in Semenic et al. (2012) were a barrier.

Colleagues providing leadership on the unit were noted as organizational resources and facilitated the practice of SSC (Wallin et al., 2005). Having authority centralized by one main leader tended to hinder the implementation of guidelines; a team-based atmosphere was more favorable. One manager developed a culture of shared responsibility for improvement by creating conditions for work based on improvements, and providing feedback on progression and completed work, which facilitated the practice (Wallin et al., 2005). Stone et

al. (2014) suggested a champion team consisting of a manager, obstetrician, anesthesiologists, lactation consultant, and bedside nurses were responsible for the effectiveness of their practice change project. Semenic et al. (2012) also reported leaders would help facilitate practice implementation, and lack of management and staff commitment could hinder the practice.

Interaction with colleagues helped with learning and behavior change, suggesting the importance of collaborative education (Wallin et al., 2005). Several authors emphasize education as facilitating practice change (Brady et al., 2014; Hung & Berg, 2011; Phillips, 2013; Stone et al., 2014; Zwedeberg et al., 2015). Semenic et al. (2012) mentioned educational opportunities that target all staff and having a culture of shared responsibility would help facilitate practice change. Hung and Berg (2011) mentioned that staff were reluctant to initiate MSSC in the OR until they were provided with further education about the practice. Semenic et al. (2012) suggests receiving input from nursing staff on education by assessing their needs would help facilitate practice.

Dabrowski (2007) and Brady et al. (2014) suggested that a facilitator to practice may be providing prenatal education to patients about the benefits of MSSC after delivery and possibly including MSSC immediately after birth within the patient's birth plan. Patients' perceptions of MSSC within this practice change project appeared to be positive and enhanced birthing experiences (Dabrowski, 2007). Patient education was identified in the literature as a facilitator, and an intervention needing to be addressed for MSSC practices on NICU (Chia et al., 2006; Stikes & Barbier, 2013; Valizadeh, Ajoodaniyan, Namnabati, Zamanzadeh & Layegh, 2013), labour and delivery units (Semenic et al., 2012; Wallin et al., 2005), and in the OR (Brady et al., 2014; Dabrowski, 2007; Hung & Berg, 2011; Magee et

al., 2014; Phillips, 2013) with term and preterm newborns.

Positive patient feedback was suggested to created motivational change on a unit (Semenic et al., 2012;Wallin et al., 2005). A case study by McKeever and St. Fleur (2012) suggested evidence supporting patients' perceptions of MSSC from an interview between patients and a nursing manager. The patients thought MSSC affects bonding, which in turn increased patient satisfaction and staff morale. This patient feedback spread to nursing staff in turn increasing nurses' compliance with SSC (McKeever & St. Fleur, 2012). Positive patient feedback was also suggested to facilitate a change in practice according to Wallin et al. (2005). The practice change project by Hung and Berg (2011) also resulted in positive feedback from patients. This feedback was shared with staff, although it was unclear how this affected nurses' practice. Semenic et al. (2012) recommends monitoring practice through audits and reviews to facilitate practice.

Situational Control

One of the most frequently noted barriers when implementing MSSC in the OR was the patients' feeling unwell (e.g. having nausea or vomiting) (Gouchon et al., 2010; Hung & Berg, 2011; Nolan & Lawrence, 2009; Smith et al., 2008; Velandia et al., 2010; Velandia et al., 2011). Velandia et al. (2011) speculated that the scent from antiseptic might have been why newborn girls cried more when in SSC with their mother (Velandia et al., 2011).

Dabrowski (2007) and Semenic et al. (2012) identified nursing routines can cause barriers to implementing MSSC immediately after delivery. Dabrowski (2007) specified routines such as placing the baby under the warmer after delivery, and performing the initial newborn assessments (e.g. newborn weighing, measuring and prophylactic medication administration). Hung and Berg (2011) also noted patients were being required to follow

hospital routines and were not requesting MSSC soon after birth, hindering practice.

Nurses expressed the need for appropriate user-friendly guidelines and education regarding SSC (Chia et al., 2006; Semenic et al., 2012; Wallin et al., 2005). The limited number of guidelines for the practice of SSC was mentioned as a barrier towards SSC implementation in the NICU (Chia et al., 2006) and might be a potential barrier for implementing MSSC in the OR (Dabrowski, 2007). American hospital policy recommendations exist for SSC with cesarean section patients (ABMPC, 2008; ABMPC, 2010), but no published Canadian policies and recommendations about SSC in the OR have been found to date.

According to Wallin et al. (2005), guidelines overall were helpful towards implementing SSC and were expressed as having a positive impact. The guidelines helped with increasing knowledge and attitudinal change on the unit. Having a facilitator to implement the guidelines helped inform nurses about the resistance to change, and persuaded their colleagues towards the implementation of the guidelines (Wallin et al., 2005). However, the focus groups in Wallin et al.'s study suggested the guidelines used in their study were not user friendly and not well adapted to the local context in turn creating a barrier to the use of the guideline. Therefore, implementing SSC in OR guidelines or revising them to become more clear and tailored to the facility may potentially be a facilitator to practice (Chia et al., 2006; Semenic et al., 2012; Wallin et al., 2005). Lack of policies and training was suggested by Semenic et al. (2012) to also be a barrier to implementation of BFI practices. Training and educating staff about MSSC in the OR is imperative to practice implementation (Chia et al., 2006; Stevens et al., 2015; Stikes & Barbier, 2013), and without this intervention it can be a barrier to practice (Semenic et al., 2012).

The nurses in the Chia et al. (2006) study identified some disadvantages to practice such as safety concerns, environmental issues (e.g. privacy issues), lack of human resources, and feasibility issues. However, many authors reported evidence that MSSC in the OR can be done safely and many practice change projects have also safely initiated MSSC in the OR (Burke-Aaronson, 2015; Brady et al., 2014; Brady et al., 2013; Dabrowski, 2007; Hung & Berg, 2011; Keller & Brenneman, 2012; Magee et al., 2014; Fortin, 2012; Smith et al., 2008; Stevens et al., 2014; Stone et al., 2014; Zauderer & Goldman, 2012).

Chia et al. (2006) specifically mention equipment barriers in the NICU when nurses were initiating SSC. Nurses' major equipment concerns were potential dislodgement of arterial and venous lines and endotracheal tubes. Other authors have identified equipment barriers that were issues in their quality improvement projects. These issues were brought up by staff when providing solutions on how to overcome barriers to practice. Equipment barriers identified included: intravenous poles that limit the space for MSSC, and placement of electrocardiogram leads affecting appropriate monitoring of the mother when baby is in SSC (Brady et al., 2014; Magee et al., 2014). Zwedeberg et al. (2015) also refers to lack of space as a barrier to MSSC in the OR.

Three studies suggested nurses perceived heavy workloads limited the time nurses had to consistently practice SSC, thus limiting practice change (Chia et al., 2006; Estabrooks, 2003; Wallin, 2003 as cited in Wallin et al., 2005). Similarly, a midwife in a qualitative study perceived that increase in patient flow, increase patient to nurse ratio and the faster work pace are barriers to practice (Zwedeberg, et al., 2015). However, Chia et al. (2006) found that nurses believed SSC was not an added burden to nurses.

Several authors reported lack of human resources as a barrier to practice (Chia et al.,

2006; Hung & Berg, 2011; Semenic et al., 2012; Stevens et al., 2014; Wallin et al., 2005; Zwedeberg et al., 2015), and some authors have suggested that more staff many be needed to facilitate MSSC in the OR practices (Crenshaw et al., 2012; Dabrowski, 2007).

Theoretical Frameworks

The literature search has resulted in certain common themes regarding the facilitators and barriers to SSC that are consistent with the TPB and KTA. These themes are reflected in the selected theoretical frameworks, which will help guide research and will further continue to structure the methodological aspects of this study.

The KTA framework is based on 30 different theories about the process of developing knowledge resources and implementing them into practice (Straus, Tetroe, Graham, Zawrensteing, & Bhattacharyya, 2009). The theory involves two main processes, which include knowledge creation and KTA. Knowledge creation includes: knowledge inquiry, knowledge synthesis, knowledge tools/products and tailoring the knowledge. KTA includes: identifying the problem, identifying and reviewing the selected knowledge or research relevant to the problem, adapting the knowledge to the local context, assessing barriers to knowledge use, selecting, tailoring and implementing interventions to promote knowledge use, monitoring knowledge use, evaluating outcomes of using the knowledge and sustaining ongoing knowledge use (Graham et al., 2007). The action process can occur by following the eight phases one after the other or simultaneously depending on the application of the theory (Graham et al., 2007). This framework has been used extensively and has been used within the Implementation of the Best Practice Guidelines Toolkit by the RNAO (RNAO, 2012). This framework emphasizes the use of evidence-based research for practice change, and the main focus is to enhance health status (Graham et al., 2007).

Knowledge synthesis within knowledge creation represents the "aggregation of existing knowledge" (Graham et al., 2007, p. 19). This knowledge is critically appraised to retrieve relevant information (Graham et al., 2007). This thesis used knowledge synthesis to discover and review the evidence on benefits and recommendations to MSSC practice in the OR. Identifying and addressing facilitators and barriers is recommended by the KTA, therefore KTA prompted the need for exploring facilitators and barriers to practice. Graham et al. (2007) suggested that, "barriers for potential adopters may be related to knowledge, attitudes, skills, habits or the like" (p. 21). The literature search indicated that there has been limited research regarding barriers to MSSC in the OR. Therefore, this study used a descriptive survey to collect information about facilitators and barriers to the practice of MSSC in the OR. KTA was used to assist in generating questions for the descriptive survey. The information gained from this survey can be used by agencies to tailor implementation activities that might increase the likelihood that RNs will follow MSSC recommendations.

The themes that emerged from the literature related to MSSC in OR practices, facilitators and barriers, are all themes that could potentially be categorized into the three belief concepts in the TPB (Ajzen, 1991; Ajzen, 2011). The three components of TPB include: attitude, SN, PBC. These concepts help predict someone's intention to perform a health behavior. The TPB is an extension of the theory of reasoned action by Fishbein (1967) with the addition of the PBC component (Glanz, Rimer & Lewis, 2002).

The more positive the attitude and SN with respect to the behavior and the greater the PBC, the stronger the individual's intention to perform the behavior should be (Ajzen, 2011). Attitude is developed based on the behavioral beliefs formed from certain attributes that individuals perceive about the behavior, whether positive or negative. Each belief is then

linked to an outcome of the behavior whether it is a positive or a negative outcome, and since behaviors are linked to the attributes that come along with the behavior, individuals already value the behavior either positively or negatively (Ajzen, 1991). Therefore, individuals will favor behaviors that have either more favorable or desired outcomes and dislike behaviors that have unwanted outcomes. In summary, the more positive that someone views the behavior the more likely they will intend and then perform the behavior (Ajzen, 1991; Ajzen, 2011).

SN is the social pressures that individuals feel from others, which will determine whether the individual will engage or not engage in the behavior. This is based on normative beliefs about whether individuals or groups approve or disapprove of the behavior. Motivation to comply is also linked with SN and refers to whether an individual is motivated to comply with what other individuals or groups want of the behavior (Ajzen, 1991; Ajzen, 2001). Previous studies suggest SN has a relationship with intention, although this is not as strong of a relationship as attitude. This suggests that individuals' personal beliefs may be more important to them than their perception of what others believe about the behavior (Ajzen, 1991).

PBC is whether one finds the behavior easy or difficult to perform. This is determined by examining control beliefs, which is how much someone feels that they can perform the behavior, and control belief frequency/perceived power, which is how often individuals see barriers occurring and how strongly those barriers influence the behavior (Glanz et al., 2002). According to the theory, if there were fewer obstacles, more resources, more opportunities and fewer barriers, then PBC over the behavior should be greater, which would link to behavioral intention and performance (Ajzen, 1991). PBC has to do with whether the

individual trying to perform the behavior believes they have the skills, resources and other prerequisites needed to perform the behavior (Ajzen, n.d.-a). PBC is also based on past experience; experiences of friends or acquaintances and other factors that would make the behavior either easier or more difficult to perform (Ajzen, 1991).

Ajzen (1991, 2011) suggests past behavior is a good predictor of future behavior. *Past behavior* is also suggested to have an independent effect on attitude, SN, and PBC.

Understanding nursing attitude, SN and PBC could result in further understanding of why this practice is currently not being practiced as widely as recommended. TPB can assist to further identify what component of the theory is mostly affecting nurses' intention and behavior regarding MSSC in the OR--whether it is all three components, or one component of the TPB that is mostly affecting their behavior. According to Ajzen (1991), all three components are accurate in predicting intention; therefore there should be a relationship with all three TPB components. Barriers and facilitators may all interfere with the nurse's intention to perform the behavior of MSSC in the OR. Therefore, the TPB is an appropriate theory to use for the exploration of nurses' perceptions about facilitators and barriers to MSSC in the OR practices using a descriptive survey.

Purpose Statement

To date, limited research on nurses' perceptions about barriers and facilitators to SSC in the OR exists. Nurses' and patients' perceptions about facilitators and barriers along with attitude, SN and PBC likely affect the current practice of MSSC in the OR. Therefore, the overall aim of this thesis is to explore RNs' perceptions about potential facilitators and barriers to MSSC in the OR with healthy, term, scheduled, elective (non-emergent/primary/repeat) cesarean section patients framed by the KTA (Graham et al., 2007)

and the TPB (Ajzen, n.d; Ajzen, 1991; Ajzen, 2011).

The following research questions will be answered:

Research Questions

1. What are nurses' behaviors with regards to MSSC in the OR?
2. What are RNs' behavioral beliefs about practicing MSSC in the OR and how do they relate to intention?
3. What are RNs' normative beliefs about practicing MSSC in the OR and how do they relate to intention?
4. What are RNs' control beliefs about practicing MSSC in the OR and how do they relate to intention?

5a. How well do attitude, SN and PBC regarding SSC predict nurses' intention regarding initiating SSC in the OR?

5b. When controlling for past behavior how well do attitude, SN, PBC predict intention?

6. Are the nurses' demographics (e.g. age, years of practice, employment status and education) related to attitude, SN and PBC?
7. What are nurses' perceptions about how to increase facilitators and decrease barriers to practicing MSSC in the OR?

Hypotheses

Research Question 1) The proportion of nurses that actually initiate SSC in the OR (past behavior) will be low. The reason behind this hypothesis is that MSSC in the OR is still a relatively new practice and other barriers, might play a role in MSSC initiation. There will also be a positive relationship between past behaviors and future intention since, according to Ajzen (1991), past behavior is the best predictor of future behavior.

If nurses have practiced MSSC in the past, their attitude, SN and PBC should be positive since the literature suggests professional satisfaction from applying MSSC. The average perceived time needed for initiation of MSSC reported by nurses who have practiced MSSC in the OR will be less than 30 minutes. There may be potential for response bias since nurses might be required to initiate MSSC within 30 minutes depending on their hospital practices. Nurses who have practiced MSSC in the past are more likely to pre-operatively educate their patients. Nurses who have a positive attitude, SN, and PBC may have been more likely to educate their patients before providing MSSC in the OR. Nurses who have a positive attitude, SN and PBC may believe educating their patients before providing MSSC in the OR to be valuable.

Research Question 2) According to the literature, attitude seems to be an adequate predictor of intention. If nurses perceive the practice of MSSC in the OR to be positive then their intention will be high and if nurses perceive MSSC in the OR to be negative then their intention will be low. Therefore, it is hypothesized that all nurses' behavioral beliefs will be strongly correlated with intention.

Research Question 3) According to Ajzen (1991), the SN contribution towards predicting intention demonstrates mixed patterns, meaning it is both a strong and weak predictor in different domains. If nurses' normative beliefs are rated low then their intention to perform MSSC in the OR will be low. When discussing barriers of MSSC in the OR with colleagues, nurses suggested that they do not have support from the entire health care team to provide MSSC in the OR. Literature also suggests that support is important to nurses when providing MSSC with mothers and that they value other health care professionals' opinions about this practice. Therefore, it is hypothesized that all normative beliefs will have a

moderate to strong positive correlations with intention.

Research Question 4) The more a nurse perceives the behavior of MSSC in the OR to be easy and in their control, the higher their intention should be. Therefore, it is hypothesized that all control beliefs will have moderate to strong positive correlations with intention.

Research Question 5a) Based on the TPB, it is hypothesized that the three constructs—attitude, SN, and PBC—will each be significant predictors of intention. As explained in research questions two to four, attitude, SN, and PBC will each be positive predictors of intention.

Research Question 5b) Based on the TPB, it is hypothesized that past behavior will be the most significant predictor of intention. Attitude, SN and PBC should also be significant predictors of intention when controlling for past behavior.

Research Question 6) It is hypothesized that younger nurses who have less experience on labour and delivery will be more supportive of MSSC, due to an increased awareness of MSSC benefits and a positive attitude towards its practice. Younger nurses may have observed MSSC more often since they may have learned about MSSC practices more recently in University. Older nurses might not have as much of a positive attitude with respect to the practice of MSSC due to potential unfamiliarity and uncertainty about the benefits of MSSC. Therefore, the younger the nurse's age the higher the nurse's attitude, SN and PBC. A similar negative relationship between years of practice and TPB constructs may exist, where more years of practice would be associated with lower attitude, SN and PBC, since older nurses typically have more years of experience than younger nurses. Older nurses are also mostly full time employees compared to younger nurses. Therefore, all TPB constructs may be different between part time and full time nurses, whereas all TPB

constructs will not be different between nurses highest form of education.

Chapter 3: Methodology

This study used a descriptive survey to identify Registered Nurses' (RN) perceptions about facilitators and barriers to MSSC in the OR with healthy term elective (non-emergent/primary/repeat) cesarean section deliveries. This self-reported online and optional paper copy descriptive survey was distributed to four acute care hospitals in Ontario; unit managers informally confirmed their participation in this study via email. The hospitals that participated in this study included: one small rural hospital located in Northern Ontario, one mid-sized suburban hospital in Southern Ontario and two mid-sized urban hospitals in Southern Ontario. These hospitals will be labeled as: H1, H2, H3, and H4. These hospitals were chosen since each hospital had either integrated MSSC in the OR, or was in the process of integration. Each hospital had been practicing MSSC for a different period of time, ranging from one to two years prior to data collection in spring 2014. These specific hospitals were chosen in different parts of Ontario with a diverse population demographic, and location in order to make the study more generalizable to the population. The labour and delivery unit demographics were diverse and they varied in their facility type, and number of deliveries per year. H1 was a Level 1 facility and had approximately 500 births per year. A Level 1 facility provides "basic care" (American College of Obstetrics and Gynecology [ACOG], (2015), and takes on patients that are low risk and are expected to have an uncomplicated birth. H2 was a Level 2 facility with approximately 3,000 births per year and H3 was a Level 2 facility with approximately 4,000 births per year. A Level 2 facility provides specialty care, takes on appropriate high-risk pregnant women admitted and transferred into the facility from a Level 1 hospital, and has capabilities of transferring to a Level 3 facility. H4 was a Level 3 facility with approximately 5,000 births per year. A Level

3 facility provides subspecialty care and can manage mothers and babies less than 34 weeks gestation transferred from both the Level 1 and level 2 hospitals that have more complex maternal and or fetal conditions (ACOG, 2015).

The proximity of the ORs differed in each hospital. H2, H3, and H4 had ORs available on their labour and delivery units, whereas H1 had its OR in close proximity but not a part of their unit. H1 also had a designated baby nurse assigned to the management of MSSC in the OR, and one circulating nurse and one scrub nurse available in the OR.

Prior to data collection, approval was obtained from each individual hospital's ethics committee. The methodology section of this thesis includes information on my personal connection to this research, sampling and sample size, methods and procedures, study measures, analysis of data and ethical considerations.

Personal Connection to Research

The concept of MSSC has always been of interest to me but was not practiced in the OR at my place of employment until recently. I am a strong advocate for MSSC in the OR since I have seen and heard of great satisfaction from patients and their support persons who were not separated from their babies at birth. Mothers who wanted a vaginal delivery but needed to have a primary or repeat cesarean seemed the most satisfied with MSSC in the OR since the separation after delivery is what they feared most. I have had both challenging and positive experiences with MSSC in the OR in the past, which has affected my practice. I have noticed through observation and discussion with colleagues in the past that the practice of MSSC in the OR is less frequent compared to vaginal deliveries. This personal observation suggests that nursing attitude, social pressures and many other factors influence the practice of MSSC in the OR. Therefore, I personally wanted to understand and potentially quantify

the barriers that are causing such discrepancies in nursing practice, explore how we can decrease these barriers and increase facilitators, and determine if there is something missing that will help fill the gap between evidence and practice.

Sampling

This study recruited participants on a voluntary basis using non-probability convenience sampling (Wood & Ross-Kerr, 2011). Only RNs were recruited since Registered Practical Nurses are not typically in the OR during a scheduled healthy term cesarean section. RNs are also the only health care professionals typically initiating the MSSC in the OR, unless midwives are involved. According to Fitzpatrick and Montgomery (2004), some descriptive surveys may have a snowball effect on retrieving the sample. For example, nurses might complete the survey and speak to one of their colleagues about the survey in turn, possibly recruiting more participants. This may have been another way that the sample was obtained for this study.

Sample Size

A total of 185 RNs working on the selected labour and delivery units were asked to participate in this survey. The study expected to obtain a target sample of 100 labour and delivery RNs, although only 68 participants responded eliciting a 37% response rate. Based on Green's (1991) multiple regression minimal sample size recommendation of 50 plus eight times *k*, where *k* is the individual predictors (Field, 2009, p. 222), a minimal sample size of 74 should have provided sufficient power to conduct a multiple regression analysis that would use the TPB hypothesis as a conceptual model. This sample size was not obtained, but significant results were found.

Methods and Procedures

A descriptive survey approach was chosen to quantify the facilitators and barriers to MSSC in the OR by obtaining RNs' opinions about the practice. Wood and Ross-Kerr (2004) states "attitudes, beliefs or behaviors are concepts that are often thought of as causal in health, illness, response to treatment and other effects. The descriptive survey can be of great value in the study of these variables" (p. 128). This descriptive survey included questions related to the TPB. This survey used 7-point likert-type scales as recommended to be used at the researchers discretion by Ajzen (n.d.-a) when using the TPB. Self-administered questionnaires were used to allow for more honest and confidential responses, since some may perceive the content reflected in the survey to be of a sensitive nature (Leeu, Hox & Huisman, 2003).

Determining the unit manager's interest in allowing their nursing staff to participate in this study was completed prior to the proposal of this thesis. The managers of the labour and delivery units were informally contacted via email to determine their interest and whether the distribution method of the survey to RNs would be feasible (see Appendix A for the letter of interest). These managers' units were chosen due to convenience and feasibility. Other managers of hospitals were contacted via email and the hospitals chosen for this study were the only ones to respond and indicate an interest. Managers were also approached at a breastfeeding conference to determine their interest in the study; this is how the hospital in Northern Ontario was selected.

An information email was sent to the unit managers, which explained the distribution process of the study documents. Unit managers were asked to send study emails to the labour and delivery RNs on their unit through their work email addresses. The initial information

email to the unit managers contained the tentative distribution dates for emailing study documents to the nurses on their units (see Appendix B for the manager information email).

The first email the managers were asked to forward to RNs on their unit was an email announcing the upcoming study. The managers were asked to forward the announcement email to the RNs on their unit on the date they received the email (see Appendix C for the announcement email).

Recruitment posters about the study were hung in all the hospitals on the labour and delivery unit in: the nurses' lounge; nurses' locker room; and, recovery room (see Appendix D for the poster). The researcher hung posters in three hospital units located in Southern Ontario. The unit manager in the hospital located in Northern Ontario hung posters on their unit. The posters were to be hung on the same day the announcement email was sent. The Northern Ontario hospital was mailed posters in advance before the announcement email was released on May 6th, 2014 expecting to be delivered by May 8th, 2014 and to be hung that day, although posters were not hung until May 15th, 2014, due to a mail delivery error. This poster was also emailed to all potential participants within the announcement email.

An invitation email was sent to the unit managers to be forwarded to the RNs on their unit two weeks after the posters were hung (May 22nd, 2014). This email contained a message inviting RNs to participate in the study, the link to the electronic survey, information about the location of an optional paper survey and the opening and closing date of the survey (see Appendix E for the invitation email). The electronic survey was accessible online on the day this invitation email was sent to the managers and paper surveys were placed in the three Southern Ontario hospitals on their labour and delivery units in and/or nearby the nurses' lounge.

Study reminder emails were sent once a week for three weeks to the managers to be forward to the RNs on their units (see Appendix F for the reminder emails). The study reminders were sent to increase the study's response rates (Hoddinott & Bass, 1986; Polit & Tatano Beck, 2012).

The invitation email and the study reminder emails each contained the link to the electronic survey and information about where to obtain the paper surveys. The electronic survey link first took the participants to the consent. Nurses were required to provide consent in order to proceed to the electronic survey (see Appendix G for electronic consent form). Consent was obtained by clicking on the "agree" response in the survey; participants were then linked to the questions in the electronic survey. Participants were asked to either copy and paste or print the consent to keep for their own records. To increase response rates, nurses had the option to return to their survey at a later time. This process was explained within the electronic consent form. Nurses were asked not to complete the surveys from work if they were using the save feature, since this could have breeched their personal confidentiality. This is because the survey would be viewable at the computer they were using to complete the survey if anyone else should attempt to fill out a survey.

Paper surveys were provided to three out of four labour and delivery units participating in this study for individuals who might have prefer to use this method, therefore allowing easier access and potentially increasing response rates (Dilman, Smyth & Christian, 2009; Fitzpatrick & Montgomery, 2004). Paper surveys were not provided to the hospital located in Northern Ontario because the distance of the hospital from St. Catharines limited the feasibility of survey distribution, collection and security. This might have potentially affected the response rate from this hospital and slightly decreased the study's sample size.

The paper survey had two consents attached: one to be taken by the participants for their

own records; and, the other to be left with the survey (see Appendix H for the paper consent form). Participants were asked to place one consent and the completed paper survey into a locked box located in the nurses' lounge on the unit; this acknowledged their consent to participate in the study.

After completing the study, participants were given the opportunity to be entered into a draw to win an Acer Tablet. This draw was an incentive for the participants and was also provided to show appreciation for their participation in this study. A separate window on the electronic survey and separate paper was supplied for participants completing the paper copy to provide their email address for the draw. This draw occurred after the final closing date of the survey. Dr. Lynn Rempel completed the lottery draw in order to maintain participants' confidentiality. The winner was contacted via the email address provided, and arrangements were made by Dr. Lynn Rempel to provide the winner with their prize. Participants' emails were not linked to the online or hard copies of the surveys in order to maintain participants' confidentiality. After the survey closing date, the locked boxes were picked up and posters were taken down on three out of four units on June 25th, 2015. Managers at the hospital in Northern Ontario were emailed to take down the posters on their unit. The study feedback email was sent to the unit managers to be forward to all nurses on their units the day after the study closing date (see Appendix I for the feedback email). This email contained a statement of appreciation for participation, an approximate expected completion date of this thesis and an explanation that their manager will be providing the final study results to all nurses on their unit after the study is completed. The timing of the survey distribution was determined in consultation with each unit manager after ethical approval of this study was obtained.

Descriptive Survey Construction and Feedback

This survey was created using information from previous research and current knowledge about MSSC in the OR. Survey questions were formulated to have both positive and negative stems in order to decrease response bias (Polit & Tatano Beck, 2012). This survey was provided to eight credible experts. These experts were selected to complete the survey and provide feedback on the entire survey in order to increase the validity of the survey (Polit & Tatano Beck, 2012). These experts included: one manager, one RN, one nurse educator, one lactation consultant, two physicians, one university professor and one RN who used to be a nurse educator.

Experts were emailed the survey and asked to provide feedback on the content in the survey. A brief description of the study was provided to them in an informal email, which contained a request to provide feedback on the survey. Experts were asked if the questions in the survey measured potential facilitators and barriers to SSC in the OR, if the questions were clear, and if there was anything additional that should have been included in the survey. The first version of the survey was emailed to a physician and an RN who are related to me. A second version was emailed to a second physician who has published about MSSC in the OR, a labour and delivery unit manager and an RN who had been a labour and delivery nurse and educator in the past. A third version was emailed to another nurse educator and a lactation consultant. Feedback was mostly provided via email on grammatical corrections, different ways to word and measure questions in the survey, and additional questions that could be added in the survey. Therefore, this feedback provided the survey with face and content validity by allowing these experts to determine whether the content is clear and accurately represents the literature and the topic being studied (Wood & Ross-Kerr, 2011). Adjustments

were made to clarify and fill gaps in the survey's contents as per these experts' comments. Throughout the development of the survey, my faculty supervisor provided input on ways to improve the survey. This survey can be seen in Appendix J Descriptive Survey.

Awareness of Current Hospital Practices Measures

The awareness of current hospital practices section within the survey assessed nurses' perceptions regarding the frequency of certain events related to scheduled healthy term elective cesarean sections and the occurrence of MSSC. This section addressed possible system factors related to barriers and facilitators to MSSC in the OR. A total of nine items were measured. These items included questions regarding: MSSC practices and policies and procedures (for both vaginal deliveries and cesarean sections); maternal and newborn separation; OR routines; personal experiences about personal education; patient education; and, patient's choice to perform MSSC in the OR.

Theoretical Measures: Theory of Planned Behavior

Intention Measures

Intention was measured using two items. The first item measuring intention asked nurses if they intend to practice MSSC in the OR with all future healthy term scheduled elective cesarean section patients. This was measured using a scale ranging from strongly disagree = 1 to strongly agree = 7. The second intention item measured how likely participants are to practice MSSC in the OR when they have the next opportunity. This was measured using a scale ranging from extremely unlikely = 1 to extremely likely = 7. This additional item can be considered a valid item since this method by Ajzen (n.d.-b) was used in the past with previous studies. Both of these items were included in a composite score in order to measure *intention*. Other studies in the past have had success using two items to

measure *intention* (Armitage & Reidy, 2008; Teo & Lee, 2010). The different time points for the two *intention* items may increase the range of responses for nurses' *intention*, because the one measure is examining the next opportunity for nurses to practice SSC in the OR while the other measures *intention* over a long period of time (infinity).

Behavioral Measures

Behaviors were measured using five items. All nurses answered four behavioral items. These included: how many times in the last two months were they in the role to provide MSSC in the OR (role); how many times they actually initiated MSSC in the OR in the last two months (actual initiation); how many times they educated patients about MSSC in the OR preoperatively in the last 2 months (pre-op education frequency); and, how much time they spend educating patients pre-operatively about SSC in the OR (pre-op education duration). Nurses who reported having practiced MSSC in the OR were also asked approximately how long they estimate it takes for them to initiate MSSC in the OR after scheduled elective cesarean deliveries (SSC initiation estimate).

The *past behavior* score was created by dividing actual MSSC initiation time by the number of times participants were in the role to practice MSSC in the OR to generate a proportion of the time that participants practiced MSSC in the last two months. The two month time period for recall in the survey questions was used to allow for a long enough time that nurses would likely have had multiple shifts in the OR, but a short enough period for relatively accurate recall.

Attitudinal Measures

Attitude was measured using a composite score involving nurses' behavioral beliefs about MSSC in the OR. The survey included 17 behavioral beliefs about MSSC in the OR

and eight items regarding benefits or outcomes to MSSC in the OR. These items were measured using a scale ranging from strongly disagree = 1 to strongly agree = 7. Out of the 25 behavioral beliefs, eight items were negative stems and scales were reversed before calculating cronbach's alpha and the attitude score. The content covered by the behavioral belief items included: nursing advocacy; time constraints; workload; stress; perceptions of benefits to MSSC practices; professional satisfaction and burden; privacy perceptions; safety and feasibility perceptions; experiences with MSSC in the OR; and, alternative actions such as the effects of initiating MSSC immediately or within 30 minutes after delivery.

Nurses' beliefs about maternal and newborn outcomes were measured. This included whether nurses believe SSC results in the following outcomes: increases newborn temperature, normalizes newborn respiratory rate, normalizes newborn heart rate, decreases newborn crying, increasing maternal bonding, increases maternal satisfaction, increases maternal confidence and decrease maternal anxiety. These behavioral beliefs were adapted from the Provincial Council for Maternal Child Health (PCMCH) (2012) Mother Baby Dyad Toolkit. A composite score for *attitude* was generated using all 25 items.

In addition to the 25 behavioral belief items, nurses were asked their belief regarding what length of time they believe is the earliest that SSC can be initiated in the OR (estimated earliest SSC initiation), which was analyzed by generating a mean score for the item.

Participants were asked in an open-ended question to indicate if there were any other outcomes that may be associated with MSSC. The open-ended questions allowed nurses the ability to include a greater range of responses and potentially elaborate on other behavioral beliefs about the practice. These questions were included because it has been found that open-ended questions sometimes increase response rates by allowing participants to have a

greater contribution to survey (Burns et al., 2008). These participant-generated "other" items were analyzed by determining themes.

Subjective Norm Measures

SN was measured using a composite score involving nurses' normative beliefs. A total of 12 normative belief items were used to assess nurses' *SN*. How much nurses' believed people important to them approved or disapproved of MSSC in the OR was measured to determine their overall perceived importance. A total of 10 people who influence MSSC in the OR, such as members of the health care team and patients, were listed in the survey. Participants were asked to indicate how much they believed each of these influential people disapproved or approved of the practice using a scale ranging from strongly disapprove = 1 to strongly approve = 7. A composite score for SN was generated using these 10 items. Participants were given the option to add another person who may disapprove or approve of MSSC in the OR. They were also able to rate how much they believe this other individual approves or disapproves of the practice. The composite score of *SN* did not include the open ended "other" item responses.

Participants were also asked two motivation to comply items these included; how important others opinions about MSSC are to them, and whether organizational culture influences their initiation of MSSC in the OR. These items were assessed using a scale ranging from strongly disagree = 1 to strongly agree = 7.

Perceived Behavioral Control Measures

PBC was measured using a composite score involving nurses' control beliefs. These 30 control belief items covered beliefs regarding: personal control; personal comfort and confidence; perception of education on SSC in the OR; the ease or difficulty of using policies

and procedures to perform SSC; whether those policies are clear and understandable; routine practices; possible personal; patient and newborn safety factors; and, environmental factors. Two items asked nurses to evaluate their hospitals' policies or procedures about MSSC in the OR and one item asked nurses about education provided to them about MSSC in the OR. Only nurses for whom these items were applicable to answered these questions. Each control belief item was measured using a scale ranging from strongly disagree = 1 to strongly agree = 7 asking how much participants believe each control belief item would make it difficult for them to practice MSSC in the OR.

Another five items were used to assess nurses' perceptions about potential facilitators to MSSC in the OR using a scale ranging from strongly disagree = 1 to strongly agree = 7. These potential facilitators included: having a special care nursery nurse initially apply SSC in the OR; delaying newborn assessment including medication administration, weighing and, measuring if the newborn is stable; being provided with education on MSSC technique and OR set up; and, having an appointed leader for MSSC in the OR.

A composite score for *PBC* was generated using the 32 items that could be answered by all participants. All negatively stemmed items were reverse coded before being included in the composite score. Participants were given the option to add up to four additional suggestions regarding MSSC in the OR control beliefs.

Open Ended Questions

Participants were asked two additional open-ended questions. One question asked participants for their idea of the best way to help minimize the barriers and the other question asked the best way to maximize facilitators to the practice of MSSC in the OR.

Demographic Measures

Demographic measures were placed at the end of the survey in order to get the most responses from more pertinent questions, in the event that a participant would opt out of the survey early (Hampton & Vilela, 2013). Participants were asked to provide the name of the hospital they were employed by. Other demographic questions included nurses: gender: age: years of experience working as an RN on a labour and delivery unit; employment status (full time, part time, casual); and, education background (diploma, bachelors, masters). These were demographic variables that had been assessed in similar survey research studies on SSC with preterm newborns in the literature review.

Analysis of Data

Quantitative data was analyzed to describe nurses' perceptions about facilitators and barriers to MSSC in the OR. Assumptions and method of analysis for each question will be further explained.

Assumptions

There are four assumptions to be met when using parametric data. These include: independence of observations, use of interval data, homogeneity of variance and univariate normal distribution (Field, 2009). The statistical model used for this study was Multiple Linear Regression (MLR). Assumptions of MLR tested included: univariate normal distribution; management of outliers; independence of observations; outcome variable continuous; linearity; homogeneity of variance; multicolinearity; normal distribution of error; and, univariate normal distribution of errors (Field, 2009).

Management of Missing Data

Deleting cases or using an imputation technique can control missing data. Many

different techniques are available and were discussed by Fox-Wasylyshyn and El-Masr (2005). How to control missing data for this study was explored using the techniques discussed within Fox-Wasylyshyn and El-Masr's (2005) literature in order to manage the data. Different missing data techniques include: sample and group mean substitution, case mean substitution, hot deck imputation, regression imputation, maximum likelihood and expectation maximization and multiple imputation (Fox-Wasylyshyn & El-Masr, 2005). The first step was to determine if specific items from the questionnaire or cases from specific constructs should be deleted from analysis because greater than 40% or more of the cases were missing data from a specific item (Raymond & Roberts, 1987 as cited in Fox-Wasylyshyn & El-Masr, 2005). According to Tabachnick and Fidell (2011), and Roth and Witzer (1995) as cited in Fox-Wasylyshyn and El-Masr (2005) if less than 5% of the data is missing then the choice of the technique for data imputation is not important. The choice of imputation technique was decided after the missing data was explored.

Methods of Analysis

The quantitative data was analyzed using SPSS version 21. The data analysis was categorized into five steps 1) Calculating individual item means: 2) Calculating composite scores (scores of each TPB construct and intention): 3) Calculating cronbach's alpha: 4) Correlations: and, 5) Multiple Linear Regression.

Descriptive statistics (frequencies, means, medians, modes, and standard deviations) were calculated for all individual items, and TPB composite scores to explore the pattern of responses in the data. Averaging the scores of items within each construct resulted in composite scores for each TPB construct and intention. Cronbach's alpha was calculated in order to test the internal consistency of the scales. Certain items were assessed to determine if

they needed to be deleted or moved into a different construct depending on the results received from the cronbach's alpha (Polit & Tatano Beck, 2012). No items were removed, since the potential change in the cronbach's alpha by removing certain items was not significant enough. Step four involved correlations to explore patterns of relationships between individual items and *past behavior* and *intention*. Step five involved MLR, which was conducted in order to assess the relationship between TPB constructs, *past behavior* and *intention*.

Research Question 1) What are nurses' behaviors with regards to MSSC in the OR?

Bivariate correlations were performed on all individual item scores using the past behavior score and intention score. Nursing behavior item scores for: pre-op education frequency; pre-op education duration; and, past behavior were also correlated with *attitude*; *SN*; *PBC*; and, *intention*.

Patient education was identified in the literature as a facilitator, and an intervention needing to be addressed for MSSC practices on NICU (Chia et al., 2006; Stikes & Barbier, 2013; Valizadeh et al., 2013; Wallin et al., 2005), labour and delivery units (Semenic et al., 2012), and in the OR (Brady et al., 2014; Dabrowski, 2007; Hung & Berg, 2011; Magee et al., 2014; Phillips, 2013) with term and preterm newborns. Thus, correlations were examined to determine if the pre-operative education frequency and duration had any relationship with all TPB constructs, intention, and past behavior.

A *t*-test was conducted to determine if there was a difference between participants past behavior (yes/no) and their estimated initiation time to MSSC in the OR.

Research Question 2) What are RNs' behavioral beliefs about practicing MSSC in the OR and how do they relate to intention?

In order to describe nurses' behavioral beliefs, the means for all 25 items were calculated. Bivariate correlations were calculated between *intention* and 25 behavioral belief item scores. This allowed me to identify which individual behavioral belief items were more strongly or weakly correlated with *intention*. The open-ended responses to the questions that were embedded as an extension of attitude was first transferred into a single excel file. These responses were read and reread. Words or phrases that had the same or similar meanings were grouped together and unique responses were listed separately using content analysis. The ratings for individual themes were reported as an average. The same methods were used for all additional open-ended questions.

Research Question 3) What are RNs' normative beliefs about practicing MSSC in the OR and how do they relate to intention?

Analyses were conducted to answer this research question in the same manner as for research question one by using the 12 normative belief items and *intention*. The open-ended questions embedded as an extension of SN were analyzed in the same manner for research question two.

Research Question 4) What are RNs' control beliefs about practicing MSSC in the OR and how do they relate to intention?

Analyses were conducted to answer this research question in the same manner as for research question one by using the 35 control belief items and *intention*. The open-ended questions embedded as an extension of PBC were analyzed in the same manner for research question two.

Research Question 5a) How well do attitude, SN and PBC regarding SSC predict nurses' intention regarding initiating SSC in the OR?

Bivariate correlations were calculated in order to determine the correlations between *intention* and each of the three TPB construct scale scores, including *past behavior*. A multivariate regression was performed in order to determine which TPB constructs were independently significant predictors of *intention*.

1. Intention = $\beta_0 + \beta_1$ Attitude + β_2 SN + β_3 PBC + ε

Research Question 5 b) When controlling for past behavior how well do attitude, SN, PBC predict intention?

A stepwise regression was conducted in order to control for *past behavior*. *Past behavior* was entered first into the model, followed by attitude, SN, and PBC.

1. Intention = $\beta_0 + \beta_1$ Past Behavior + ε
2. Intention = $\beta_0 + \beta_1$ Past Behavior + β_2 Attitude+ β_3 SN + β_4 PBC + ε

Research Question 6) Are the nurses' demographics (e.g. age, years of practice, employment status and education) related to attitude, SN and PBC?

The scores for age and years of practice were correlated with *attitude*, *SN* and *PBC*. Employment status was divided into two categories part-time and full-time. A *t*-test was performed on each TPB construct examining the difference between TPB constructs and employment status (part-time vs. full-time). Education was also analyzed using *t*-tests because nurses received their highest education in only two categories, diploma and bachelors. There was only one participant who had their masters; therefore an *ANOVA* was not conducted. This was completed to determine whether there is a different *attitude*, *SN* and *PBC* amongst nurses with different educational backgrounds. If there had been a difference

between TPB constructs and education further analysis would have been conducted to determine where this difference lies.

Research Question 7) What are nurses' perceptions about how to increase facilitators and decrease barriers to practicing MSSC in the OR?

This qualitative open-ended question at the end of the survey was individually analyzed to answer this research question. Content analysis was used to decipher the themes that are present within these open-ended questions (Polit & Tatano Beck, 2012; Wood & Ross-Kerr, 2011). The answers were content coded into themes via computer using a paper and a word document that involved a coding agenda reporting the frequency of themes (Mayring, 2000). All responses from nurses were read individually twice then words/phrases were coded into themes that emerged (e.g. education, policies and procedures, communication etc.) (Wood & Ross-Kerr, 2011). Themes were again reviewed for further subthemes (e.g. education on technique, policies and procedures clarity, communication amongst the health care team, etc.) (Mayring, 2000). Some themes were also reconsidered or grouped together due to their similarities after re-reading the analysis. Tabulation of the theme frequency was completed to determine how many participants gave that response.

Ethical Consideration

This researcher completed the Tri-council Policy Statement 2: CORE tutorial. Information discussed in this section has been based off of the tutorial from the Government of Canada (2013) and Brock University's Ethical Clearance Form.

Data Storage and Transfer

All data collected during this study was stored on a password protected secured personal laptop my secured Brock personal account, and a password protected external hard

drive. After the paper surveys were completed, they were placed into locked boxes, which were accessible in the nurses' lounge on the unit. The data obtained from the paper surveys were transferred and stored on a password protected secured personal laptop and the investigators' secured Brock personal accounts. Before and after the data from the paper survey was transferred, the paper surveys were stored in a residential safe. All of the data was backed up onto a password protected external hard drive and will be kept for five years after the publication of the study results. After this time (five years) the data will be deleted from all of the storage devices and paper surveys will be shredded. Only my faculty supervisor and I will have access to this data.

Potential Conflict of Interest and Coercion

I am employed by one of the hospitals participating in the study. Conflict of interest was decreased by having unit managers distribute the survey via their email address to all the RNs on their unit. Having managers send the survey also limited the chance that my colleagues would feel influenced or obligated to complete the survey, which could affect the integrity of the research. In order to decrease the possibility of perceived coercion, I did not work for the three weeks that the survey was open for data collection. I also did not discuss specific details about my research with any colleagues after the proposal was accepted. One RN working on the same unit that I work on is my sister. She provided feedback on the survey informally as an expert. There was no data collected from her and she was asked not to participate in the study. My work and personal email address were not provided for the distribution of this survey but my name and Brock University email address were provided to the nurses within the email in the event that they should have any questions or concerns. Two participants had concerns that the questionnaire did not allow them to answer all the

questions in the way that they wanted; therefore they emailed further suggestions of barriers and facilitators to practice. These were sent directly to my supervisor, who directed this information to me. No participants contacted me directly during this study.

Research Risks and Benefits

The survey for this research was created and accessible online through a Canadian survey distribution company called Fluid Survey (Fluid Survey, n.d.). This survey had the highest security features, which was adjusted when creating the survey online. A membership through Fluid Survey was purchased online to gain access to creating and distributing the survey for this study, and to also allow for the transfer of online data onto SPSS.

When conducting this study, RNs' confidentially was maintained through the use of instructions provided throughout the consent forms. These instructions reminded nurses to detach the email addresses from the optional paper surveys. A separate window that was not linked to participants' surveys was to be filled out online if participants chose to be included in the incentive draw. Privacy and confidentiality may have been breached if participants wished to complete their electronic survey while at work. If participants saved their responses and return to complete the survey, other nurses might have potentially had access to their survey from a work computer; this was explained within the electronic consent form. Forwarding the survey link to a home email address as mentioned within the consent might have also increased the nurses' privacy and confidentiality. No confidentiality breeches were reported.

No harm to any participant was anticipated since this study had minimal to no risk. Psychological and emotional risks were not foreseen since all of the data was analyzed as a group and no one participant's answers were specified in the study. No measures were taken

to identify participants in this study; all information was kept confidential, data was only analyzed and reported using aggregate methods, and no participants were personally linked to their answers in any way. This decreased the social risks to the participants and the listed health care professionals in the study.

No potential direct benefits were suggested for the nurses participating in this study, although these nurses may have increased their awareness of potential factors related to MSSC in the OR. Participating in this study contributed to the maternal child health and research community's insight on the practices of MSSC in the OR. This study allowed participants to provide constructive feedback about the practice of MSSC in the OR. Participants had the ability to not disclose any information that they felt uncomfortable sharing. Facilitators and barriers to MSSC practices in the OR have not been studied to date. This study contributed insight about the practices of MSSC in the OR that could influence future practice on labour and delivery units. No other further benefits were foreseen.

The length of the survey may have posed a risk for incomplete submissions. Potentially some of the demographics may have identified the nurses who completed the survey, but individual surveys were not examined in order to maintain confidentiality. Other potential identifiers included; nurses educational background, since there were a small number of nurses who had received their masters, and the participants' reported age. The open-ended questions in the survey may have posed an increased confidentiality breech risk due to the reporting of potentially patient specific or colleague identifiable information. Both consents clearly stated not to include any personal or confidential information in the survey. No personal or identifiable information was used in the final research study results; no data found identified any participants who were involved in the study.

The only confidential information retained for this study was the winner's email address after the lottery draw, which was conducted by my supervisor. All the email addresses provided were not linked to the participants' survey responses. Partial data from RNs was analyzed when partially completed surveys were submitted. Participants were still able to enter into the draw even if they submitted a partially completed survey.

Study Withdrawal

The information provided by these participants was anonymous. When participants completed the electronic survey, they were not able to withdraw all of their information from the study. Nurses could exit the survey at any time by closing the electronic survey and could delete their responses prior to submitting the survey. Nurses could have stopped completing their survey at any time without penalty. The paper survey contained no identifying information; therefore, participants were unable to withdraw from the study after submitting the survey into the locked box located in the nurses' lounge. This is described within both of the consent forms under Voluntary Participation. The nurses could have disposed of the paper consent form as they wished if they planned to withdraw from the study before submission.

Chapter 4: Results

The following chapter will discuss data cleaning, demographics of the sample and provide in-depth information about the research findings.

The first part of the results section will discuss the statistical research findings using descriptive statistics and correlations reported using all available data, whereas the remaining components of the statistical research findings will be discussed using multiple linear regression and *t*-test results using data with series mean imputations and deleted outliers. Lastly, the results of the open ended "other responses" and the thematic content analysis will be explained.

Data Cleaning

Data was merged from the fluid surveys software program online to SPSS version 21 followed by the imputation of paper survey data into this raw data file on SPSS before data cleaning. Prior to analysis, data was cleaned by assessing for missing cases, missing data, and patterns.

Missing Cases

A total of five cases were completely deleted because participants had only agreed to this research study's consent and did not complete the rest of the survey.

Missing Data

Frequency tables were constructed to assess for missing data. No item had more than 24% missing data; therefore no individual items were deleted from this study. The items with approximately 20% missing data included: the earliest that MSSC can be initiated in the OR after delivery; five SN items; participants' reported age; and, participants reported years of employment. A pattern of missingness was observed with the five SN items that asked how

much individuals approve or disapprove of MSSC in the OR. The items most frequently left unanswered included: administration, obstetrician, pediatricians, lactation consultants, and special care nursery nursing colleagues. All of this data was suggested to be not missing at random, likely because the items refer to staff members that participants did not have access to on their units or did not know well enough to be prepared to estimate approval for MSSC in the OR. Therefore, the series mean for these data points were imputed.

Data missing at random was discovered on two cases that were filled out using the paper survey. These two participants omitted one entire page of the survey: therefore leaving some questions unanswered. These questions were left as missing data.

When calculating the constructs scale scores of attitude, SN and PBC, if less than 50 % of the item data was missing, the series mean was imputed for the missing item data. When greater than 50% of data was missing within a case, the series mean was not imputed and these cases were excluded from the multiple linear regression (Aday & Cornelius, 2006). The case numbers excluded include: 41 (attitude construct); 9 and 18 (SN construct); 4 and 59 (PBC construct). Series means were imputed for all other missing data. Therefore, 5 cases were excluded before performing the regression analysis. Series mean imputation reduces the variance in the data but does not change the mean (Polit & Tatano Beck, 2012). Series mean imputation is the most common method for replacing missing data (Field, 2009).

On items requiring an open-ended numerical response, some participants provided a range rather than a single number (e.g. 20 – 30). These responses were managed by using the average of the two values. Similarly, if participants provided a range such as less than five the number closest to the reported range was chosen (e.g. four).

After data cleaning was completed, all available data and the data with series mean imputations were examined to determine if series mean imputations significantly changed the results, however few differences were noted in the overall pattern of findings.

The data to be used for the multiple linear regression was also explored for further outliers. Field (2009) defines an outlier as being outside of the normal distribution or three standard deviations away from the mean. No outliers existed after managing cases with greater than 50% of their data missing (Aday & Cornelius, 2006).

Demographics of the Sample

From a total of 185 potential participants, 68 participants completed the self-reported electronic and optional paper copy survey, providing a response rate of 37%. A total of 39 electronic surveys and 29 paper copy surveys were completed from four different hospitals in Ontario. One hospital did not have access to the paper copy surveys due to feasibility reasons as mentioned previously within the methodology chapter.

The participants were on average 37.1 years of age, ranging from 22 to 64 years of age. All participants were female and had been employed for an average of 10.23 years, ranging from 1 to 30 years of experience. Most participants were employed full time and had a Bachelors Degree. See Table 1 for demographic information.

Table 1

Demographics of the Sample

Variable	*n*	Mean (*SD*)
Age in years	48	37.10 (9.92) Range = 22 – 64
Employment Experience in years	51	10.23 (7.84) Range = 1 – 30
Variable		**(*n*)%***
Gender		
Female		(63) 100.0
Employment Status		
Full time		(36) 66.7
Part time		(17) 31.5
Casual		(1) 1.9
Educational Background		
Diploma		(24) 44.4
Bachelors		(29) 53.7
Masters		(1) 1.9

Note. *May not add up to 100% due to missing data.

Research Findings

Awareness of Current Hospital Practices

A summary of the participants' responses regarding their awareness of current hospital practices is presented in Table 2. All participants indicated that MSSC was practiced with vaginal deliveries in their hospital. When asked if MSSC in the OR was being practiced, 55% of participants responded "Yes", 43% responded "No", and 2% responded, "I don't know". One participant selected both yes and no. That response was interpreted to mean, "Yes" for further analyses.

Fifty three percent of participants indicated that their hospital has a policy and procedure for MSSC after vaginal deliveries; whereas only 33% responded that they have a policy and procedure for MSSC in the OR.

Almost all participants noted that their hospital has provided them with education on MSSC after vaginal deliveries (92%). When participants were asked if they had been provided with education about MSSC in the OR, 41% responded "No". Also, 85% of participants reported that they had not been supervised in the technique to perform MSSC in the OR. Patient education about MSSC in the OR was also infrequent. Most participants also indicated that their hospitals do not provide patients with written information to educate them about MSSC in the OR (72%).

Table 2

Descriptives of Awareness of Current Hospital Practices

Awareness of Current Hospital Practices Item	*n*	Yes *n* (%)	No *n* (%)	I don't know *n* (%)
Does your labour and delivery unit have a specific policy and procedure for maternal SSC after vaginal deliveries?	62	33 (53.2%)	24 (38.7%)	5 (8.1%)
Is your labour and delivery unit currently practicing maternal SSC after vaginal deliveries?	62	62 (100%)	0 (0%)	0 (0%)
Does your labour and delivery unit have a specific policy and procedure for maternal SSC in the OR?	61	20 (32.8%)	39 (63.9%)	2 (3.3%)
Is your labour and delivery unit currently practicing maternal SSC in the OR?	60	33 (55.0%)	26 (43.3%)	1 (1.7%)
Does your hospital provide patients with written information to educate them about SSC in the OR?	61	5 (8.2%)	44 (72.1%)	12 (19.7%)
Has there been any education provided to you in the past on maternal SSC after vaginal deliveries?	61	56 (91.8%)	5 (8.2%)	--

Has there been any education provided to you in the past on maternal SSC after cesarean section deliveries?	61	36 (59.0%)	25 (41.0%)	--
Have you been supervised in the technique to perform maternal SSC in the OR?	61	9 (14.8%)	52 (85.2%)	--

Note. -- Indicates that these items did not have an "I don't know" response. Percentages in each item may not add up to 100% due to missing data.

Intention to Practice MSSC in the OR

An intention score was calculated by averaging the two intention items, intention to practice MSSC in the future and intention to practice MSSC when they have the next opportunity. Two missing data points were replaced with series mean imputations on the first intention item, while on the second intention item one missing data point was replaced. Participants' mean intention score was 4.77 out of 7 ($SD = 2.03$, $n = 56$), suggesting this sample of nurses were slightly intent on practicing MSSC in the OR. Only 9.3% of participants did not intend to practice MSSC in the future and 7.3% reported they were extremely unlikely to practice MSSC when they have the next opportunity. The intention score was normally distributed ($M_0 = 5.00$, $M_d = 7.00$, skewness = -.43, kurtosis = -1.15).

Behavior

Participants reported that mom and baby are separated an average of 14.76 minutes ($SD = 9.68$, range: 0 to 30 minutes, $n = 59$) after delivery in the operating room. Participants who had practiced MSSC in the OR reported that it takes them on average approximately 8.68 minutes ($SD = 7.74$, range: 2 to 35 minutes, $n = 31$) to initiate MSSC after delivery. Thirty eight percent of participants indicated this question was "not applicable" to them because they had not practiced MSSC in the OR.

On average in the previous two months, participants reported having been in the role where they were expected to provide MSSC in the OR 3.52 times (*SD* = 4.80, range: 0 to 20 times, *n* = 55). This sample of nurses also reported that in the last two months, they had actually initiated MSSC in the OR from 0 to 10 times (*M* = 1.91 times, *SD* = 2.93, *n* = 55). Forty percent of participants (*n* = 22) reported that they had not been in the role to practice MSSC in the OR and 55% (*n* = 30) reported that they had not actually initiated MSSC in the OR in the last two months. These two items were used to calculate participants' past behavior score, which is referred throughout this document as “past behavior”.

On average, participants reported that they practiced MSSC in the OR 32% of the time that they had been in the role to practice MSSC in the previous two months (*SD* = 41.27). Fifteen percent of participants (*n* = 8) perceived themselves as practicing MSSC in the OR 100% of the time in the last two months.

On average, participants reported that in the previous two months they had pre-operatively educated scheduled healthy term elective cesarean section patients about MSSC in the OR 2.34 times (*SD* = 3.15, *n* = 56), and that they spent on average 2.47 minutes educating each patient about MSSC in the OR preoperatively (*SD* = 3.36). Approximately 48% (*n* = 27) of participants had never pre-operatively educated their patients about MSSC in the OR.

There is a strong positive relationship between the frequency of times participants performed pre-operative education with patients and their past behavior of performing MSSC in the OR ($r = .62, p < .001$), and a significant moderate to strong positive relationship between the duration of time spent pre-operatively educating their patients and their past MSSC behavior ($r = .52, p < .001$). There is also a moderate to large positive relationship

between the frequency of times participants pre-operatively educated their patients about MSSC in the OR and their intention to conduct MSSC in the OR ($r = .54, p < .0001$). Similarly, there was a moderate positive relationship between intention and the duration of time (in minutes) participants would spend pre-operatively educating patients about the practice ($r = .41, p = .002$).

Participants who had practiced MSSC in the OR in the past reported that it took less time to initiate MSSC in the OR ($r = -.50, p = .005$). Similarly, participants who believed it took them less time to actually initiate MSSC after delivery were more intent to practice MSSC in the OR ($r = -.60, p < .0001$).

Behavioral Beliefs

Participants provided information regarding their behavioral beliefs about MSSC in the OR. These results can be found in Table 3. When interpreting the item averages obtained from participants' responses using the 7-point likert scale, mean scores from 1 to 1.44 were interpreted as meaning that participants strongly disagreed, 1.45 to 2.44 was interpreted as slightly disagreed, 2.45 to 3.44 as disagreed, 3.45 to 4.44 as uncertain, 4.45 to 5.44 as slightly agreed, 5.45 to 6.44 as agreed, 6.45 to 7.00 as strongly agreed.

Participants slightly agreed that MSSC in the OR is a positive experience for nurses, a safe practice and professionally satisfying. They also slightly agreed they are advocates for performing MSSC in the OR.

These participants agreed that MSSC in the OR should be initiated within 30 minutes and slightly agreed that MSSC in the OR should be initiated immediately after delivery. They agreed that MSSC in the OR 30 minutes after delivery was a feasible practice, whereas they

were uncertain whether they agreed that MSSC in the OR immediately after delivery was feasible.

On average, when participants were asked to estimate how long it should take them to initiate MSSC in the OR they suggested that the earliest time of initiation should be 12.52 minutes ($SD = 11.34$, $n = 50$) after delivery. Participants were uncertain that there is not enough time to initiate MSSC in the OR after delivery.

Participants slightly agreed that MSSC in the OR increases their workload and affects the completion of designated tasks, although suggested that they are uncertain if MSSC in the OR is an added burden to labour and delivery nurses. They also slightly disagreed that MSSC in the OR is a stressful experience. Participants also slightly disagreed that MSSC in the OR prevents them from administering vitamin K and eye ointment after delivery, which is a designated task post delivery of a newborn.

Participants reported that MSSC is a clean practice and that they believe mothers also think that it is a clean practice. They also reported that MSSC in the OR allows for appropriate patient privacy. Participants believed that MSSC in the OR has a positive effect on breastfeeding. When participants were asked their opinions about other benefits to MSSC in the OR they agreed that MSSC in the OR results in; normalized newborn temperature; respiratory rate; heart rate; decreased newborn crying; increased maternal bonding; increased maternal satisfaction; increased maternal confidence; and, decreased maternal anxiety.

Table 3

Descriptives of Behavioral Beliefs about MSSC in the OR and Pearson's Correlations with Intention and Past Behavior

Descriptives			Correlations	
Behavioral Belief Item	*n*	Mean (*SD*)	Past Behavior Pearsons *r*	Intention Pearsons *r*
I am an advocate for performing maternal SSC in the OR.	54	4.87 (1.88)	.66****	.79****
There is not enough time to initiate maternal SSC in the OR after delivery	53	3.63 (1.96)	-.42**	-.48****
Applying maternal SSC in the OR increases my workload and affects completion of designated OR tasks.	54	4.56 (1.88)	-.25	-.26
Maternal SSC in the OR positively affects breastfeeding.	54	5.41 (1.80)	.37**	.47****
If SSC is provided in the OR, it prevents me from administering vitamin k and/or eye ointment.	54	1.70 (1.37)	.14	.02
Maternal SSC in the OR is an added burden to labour and delivery nurses.	55	3.47 (2.17)	-.23	-.26
Maternal SSC after delivery is unclean.	55	1.55 (1.02)	-.08	-.20
Mothers think that maternal SSC after delivery is unclean.	55	2.20 (1.16)	-.06	.05
Helping mothers to provide maternal SSC in the OR is a positive experience for nurses.	54	4.96 (1.75)	.55****	.71****
I am stressed when I provide SSC after a cesarean section.	52	2.44 (1.60)	-.26	-.27
Maternal SSC should be initiated within 30 minutes	55	5.51 (1.79)	-.16	-.12

after delivery.				
Maternal SSC should be initiated immediately after delivery.	55	5.25 (1.87)	.42**	.48****
Maternal SSC in the OR does not allow appropriate patient privacy.	55	2.27 (1.43)	-.25	-.30*
Maternal SSC in the OR is a safe practice.	55	4.71 (1.95)	.46**	.70****
Maternal SSC in the OR is professionally satisfying.	55	4.95 (1.74)	.56****	.75****
Maternal SSC in the OR within 30 minutes after delivery is feasible.	53	5.55 (1.45)	.18	.17
Maternal SSC in the OR immediately after delivery is feasible.	54	3.98 (2.27)	.50****	.53****
Increases newborn temperature.	56	5.48 (1.80)	.22	.26
Normalizes newborn respiratory rate.	57	6.12 (1.30)	.09	.35**
Normalizes newborn heart rate.	57	6.18 (1.30)	.15	.38**
Decreases newborn crying.	56	6.05 (1.26)	.22	.47****
Increases maternal bonding.	57	6.02 (1.48)	.25	.28*
Increases maternal satisfaction.	57	5.88 (1.55)	.34*	.40**
Increases maternal confidence.	57	5.46 (1.83)	.28*	.43**
Decreases maternal anxiety.	55	5.55 (1.64)	.30*	.38**

Construct	*n*	Cronbach's α
Attitude	53	.92

Note. *$p < .05$; **$p < .01$; ***p < .001; ****$p < .0001$

Table 3 includes bivariate correlations between behavioral beliefs and past behavior, and behavioral beliefs and intention. Participants who reported being strong advocates for MSSC in the OR, and perceived the overall experience as positive, safe, professionally satisfying, feasible to practice immediately after delivery were more likely to have practiced MSSC in the past and intended to practice MSSC in the future. Also, participants who estimated a shorter time for MSSC initiation were more likely to intend to practice MSSC in

the OR (r = -.62, p < .0001). These items all had a moderate to strong relationships with intention and past behavior. A *t*-test was completed to determine if there is a difference between participants past behavior and their reported estimated initiation time in minutes. Participants who have practiced MSSC in the past estimated it should take them a shorter period of time to initiate MSSC in the OR ($t(55) = -3.28, p = .002$), 95% CIs [-13.72, -3.10]. Participants who have practiced MSSC in the past estimated it should take 8.04 minutes to initiation, whereas participants who have not practiced MSSC in the past estimated it should take 16.55 minutes.

A significant moderate positive relationship existed with participants' past behavior and whether they perceived the practice of MSSC in the OR to be safe. There was an even stronger positive relationship found between the perception of safety and participants' intention to practice MSSC in the OR.

Participants who reported there is not enough time to initiate MSSC in the OR, and estimated a longer MSSC initiation time ($r = -.47, p = .001$) were less likely to have practiced MSSC in the past; this was a significant moderate negative relationship. Similarly, participants who reported there is not enough time to initiate MSSC in the OR and that MSSC does not allow appropriate patient privacy were less likely to intend to practice MSSC in the OR. These items also had a significant moderate negative relationship with intention.

A significant moderate positive relationship existed between participants' belief that MSSC should be initiated immediately after delivery and their past behavior and intention. Participants who previously practiced MSSC in the past reported that MSSC should be initiated immediately after delivery. Similarly, when participants reported that MSSC in the

OR should be initiated immediately after delivery, they were also more likely to intend to practice MSSC in the OR.

A significant moderate positive relationship existed with participants who have previously practiced MSSC in the past and reported that MSSC in the OR positively affects breastfeeding. Similarly, a significant moderate positive relationship was found between nurses' agreement that MSSC in the OR positively affects breastfeeding and participants' intention to practice MSSC in the OR.

Participants were more likely to have practiced MSSC in the past if they reported that MSSC in the OR increased maternal satisfaction, increased maternal confidence, and decreased maternal anxiety. Participants who reported that MSSC in the OR has many positive benefits for the mother baby dyad were also more intent to practice MSSC in the OR. Almost all benefits of MSSC in the OR had a significant moderate correlation with intention. Therefore participants who reported that MSSC had benefits such as normalized newborn respiratory rate, normalized newborn heart rate, decreased newborn crying, increased maternal bonding, increased maternal satisfaction, increased maternal confidence, and decreased maternal anxiety were more likely to intend to practice MSSC in the OR.

Attitude

An attitude score was determined by calculating the average of the 25 behavioral belief items in the survey previously seen in Table 3. Participants had a slightly positive overall attitude towards MSSC in the OR ($M = 5.40$, $SD = .98$). This construct is normally distributed ($M_0 = 5.46$, $M_d = 4.44$, skewness = -.40, kurtosis = -.60). Cronbach's alpha is .92, which suggests that the results from the behavioral belief items consistently measured the construct of attitude.

The construct of attitude was examined to determine the overall relationships between attitude and: intention; past behavior; pre-operative education frequency; and, pre-operative education duration. Results can be found in Table 4.

There is a significant strong positive correlation between attitude and intention. Similarly, attitude and past behavior and attitude and pre-operative education frequency had significant moderate positive relationships.

Table 4

Bivariate Correlations Between All Constructs, Intention, Past Behavior and Pre-op Education

Variable	*n*	1	2	3	4	5	6	7
1. Intention	--	--	--	--	--	--	--	--
2. Past Behavior	56	.53****	--	--	--	--	--	--
3. Pre-op education frequency	56	.51****	.58****	--	--	--	--	--
4. Pre-op education duration	56	.40**	.50****	.64****	--	--	--	--
5. Attitude	55	.59***	.43**	.44**	.25	--	--	--
6. SN	53	.40**	.54****	.48****	.39**	.64****	--	--
7. PBC	53	.39**	.38**	.29	.25	.38**	.33*	--

Note. SN = Subjective Norm, PBC = Perceived Behavioral Control
*$p < .05$; **$p < .01$; ***p < .001; ****$p < .0001$

Normative Beliefs

Table 5 includes Registered Nurses' normative beliefs about the practice of MSSC in the OR. When interpreting the item averages obtained from participants' responses using the

7-point likert scale, mean scores from 1 to 1.44 were interpreted as believing the referent strongly disapproved, 1.45 to 2.44 was interpreted as slightly disapproved, 2.45 to 3.44 as disapprove, 3.45 to 4.44 as uncertain, 4.45 to 5.44 as slightly approved, 5.45 to 6.44 as approved, 6.45 to 7.00 as strongly approve.

The strongest perceived approval ratings reported by participants were for lactation consultants, followed by unit managers. Participants believed that their labour and delivery nursing colleagues and obstetricians slightly approve of MSSC in the OR, and were uncertain if anesthesiologist approve or disapprove of the practice.

Table 5

Descriptives of Normative Beliefs about MSSC in the OR and Pearson's Correlations with Intention and Past Behavior

Descriptives			Correlations	
Normative Beliefs Item	*n*	Mean (*SD*)	Past Behavior Pearsons *r*	Intention Pearsons *r*
Administration (e.g. Program Director)	49	5.88 (1.38)	.31*	.30**
Manager	51	6.20 (1.22)	.32*	.33*
Obstetrician	54	4.50 (1.65)	.56****	.19
Anesthesiologist	52	3.65 (1.87)	.49****	.30*
Pediatrician	49	5.21 (1.57)	.39**	.14
Lactation Consultant	49	6.50 (1.06)	.03	.15
Labour and Delivery Nursing Colleagues	56	4.91 (1.62)	.28*	.32*
Special Care Nursery Nursing Colleagues	51	5.06 (1.55)	.40**	.20
Patients	54	5.50 (1.30)	.28*	.33*
Patient's	53	5.38 (1.32)	.30*	.38**

Support Person

Construct	*n*	Cronbach's α
Subjective Norm	43	.86

Note. *$p < .05$; **$p < .01$; ***p < .001; ****$p < .0001$

See Table 5 for bivariate correlations between normative beliefs and past behavior, and normative beliefs and intention. Participants that previously practiced MSSC in the OR reported that the opinion of other people regarding the initiation of MSSC in the OR is significantly important to them ($r = .33, p = .01$). A significant small to moderate positive relationship exists between the participants' belief that the overall organizational culture of their hospital has an influence on their initiation of MSSC in the OR and their intention to practice ($r = .29, p = .03$).

There are many relationships that exist between participants' past behavior and who they believe approve of the practice. With the exception of the beliefs about the approval of lactation consultants, participants who had previously practiced MSSC in the OR were more likely to report that others approve of MSSC in the OR. Participants who reported that administration, management, anesthesiology, labour and delivery nursing colleagues, patients, and the patient's support person approve of MSSC in the OR were more likely to intend to practice MSSC in the OR.

Subjective Norm

A SN score was determined by calculating the average of the 10 normative belief items previously seen in Table 5. The series mean was imputed for missing data and outliers were deleted ($n = 54$). Participants agreed that the overall culture has an influence on them ($M = 5.00, SD = 1.98$), although they were uncertain that the opinions of other people have an influence on their practice ($M = 3.54, SD = 1.84$).

When examining the SN composite score, it was found that participants reported a slightly positive SN towards MSSC in the OR ($M = 5.29$, $SD = .89$). This construct is normally distributed because the mean, median and mode are similar and the skewness and kurtosis are less than three ($M_0 = 5.23$, $M_d = 5.80$, skewness = -.13, kurtosis = -.69). A Cronbach's alpha of .86 suggests that the results from these normative belief items consistently measured the construct of SN.

The SN score was examined to determine the overall relationships between SN and: intention; past behavior; pre-operative education frequency; and, pre-operative education duration. Results can be found in Table 4.

A significant moderate positive correlation between SN and: intention; past behavior; pre-op education frequency; and, pre-op education duration was found.

Control Beliefs

Participants' control beliefs can be seen on Table 6. When interpreting the item averages obtained from participants' responses using the 7-point likert scale, mean scores for responses from 1 to 1.44 were interpreted as strongly disagreed, 1.45 to 2.44 as slightly disagreed, 2.45 to 3.44 as disagreed, 3.45 to 4.44 as uncertain, 4.45 to 5.44 as slightly agreed, 5.45 to 6.44 as agreed, 6.45 to 7.00 as strongly agreed.

Participants indicated they are uncertain about whether they have full control of when or when not to initiate MSSC in the OR. However, they reported that they agreed to being comfortable and confident with initiating MSSC within 30 minutes after delivery.

Participants believed that concerns about maternal and newborn health status issues would make it difficult for them to apply MSSC in the OR. However, participants were

uncertain that the newborn having hypothermia after delivery would make it difficult for them to apply MSSC in the OR.

Nurses agreed to strongly agreed that the following were barriers to MSSC in the OR: patient feeling nauseated, patient having dry heaves and or vomiting, patient having breathing difficulties, patient feeling drowsy, patient being incoherent, patient having a post partum hemorrhage, patient requiring a blood transfusion, patient requiring to be transferred in the ICU, newborn having health factors requiring treatment (e.g. cardiology, respiratory resuscitation etc.), newborn needing to be transferred to the special care nursery/NICU/different hospital, and not enough staff in the OR to both perform MSSC and complete required OR tasks.

Participants were uncertain if the physical environment in the OR (e.g. OR table, general anesthetic machine, baby blankets, baby warmer etc.) is a barrier to MSSC in the OR. However, participants slightly agreed that equipment positioning on the mother (e.g. blood pressure cuff, oxygen saturation probe, electrocardiogram leads and intravenous lines) negatively impacts the practice of MSSC in the OR. Participants reported that the location of the support person in the OR does not make it difficult to apply MSSC in the OR, although not having enough staff in the OR to perform MSSC and complete the required OR tasks makes it difficult to facilitate MSSC in the OR.

Participants reported that they were uncertain If MSSC in the OR causes tripping or falling risks related to OR setup and were uncertain if MSSC in the OR causes back, shoulder and muscle strain when assisting patients to hold their baby in the OR.

A section of the control belief items measured specific facilitators to MSSC in the OR. Participants slightly agreed to agreed that the following items would help facilitate

MSSC practices: having a special care nursery nurse initially apply MSSC in the OR; delaying newborn assessment; being provided with education on MSSC technique and OR set up; and, having an appointed leader for MSSC in the OR. Participants were uncertain if changing the OR set up would facilitate the practice.

Participants slightly agreed that education they had received was beneficial for their ability to provide MSSC in the OR ($M = 4.88$, $SD = 1.98$, $n = 34$). Thirty five percent of participants ($n = 22$) selected this response as "not applicable", which suggests that they have not been provided with education on MSSC in the OR that was beneficial for their ability to provide MSSC in the OR. Participants that reported their hospital has a policy and procedure on MSSC in the OR ($n = 18$), slightly agreed that their policy and procedure are clear and understandable ($M = 4.61$, $SD = 1.72$) and that it makes it easier for them to determine when to perform MSSC in the OR ($M = 4.61$, $SD = 1.61$). Approximately 60% of participants ($n = 38$) reported that these responses were not applicable to them indicating that they do not believe their hospital has a policy and procedure on MSSC in the OR.

Table 6

Descriptives of Control Beliefs about MSSC in the OR and Pearson's Correlations with Intention and Past Behavior

Descriptives			Correlations	
Control Beliefs Item	*n*	Mean (*SD*)	Past Behavior Pearsons *r*	Intention Pearsons *r*
I have full control of when or when not to initiate maternal SSC in the OR.	56	4.34 (1.91)	.17	.16
I am comfortable and confident with initiating maternal SSC within 30 minutes after delivery.	55	5.78 (1.49)	.35*	.54****

Policies and procedures influence me to initiate maternal SSC in the OR.	46	3.92 (1.93)	.34*	.25
Patent feeling nauseated.	54	6.17 (1.15)	-.06	-.31*
Patient having dry heaves and or vomiting.	54	6.35 (1.17)	.10	.02
Patient feeling shaky.	54	5.48 (1.61)	-.43**	-.39**
Patient having breathing difficulties.	54	6.44 (1.16)	.05	.09
Patient feeling drowsy.	54	5.98 (1.45)	-.23	-.22
Patient being incoherent.	53	6.17 (1.55)	-.07	.15
Patient being in pain after delivery in the OR.	53	5.74 (1.70)	-.06	.02
Altered maternal movement due to anesthesia.	54	5.02 (2.00)	-.29*	-.27
Vision problems from anesthetic.	52	5.00 (2.07)	-.10	.04
Patient having a postpartum hemorrhage.	54	6.30 (1.46)	.13	.18
Patient requiring a blood transfusion.	54	6.06 (1.76)	.29*	.12
Patient requiring to be transferred to ICU or another hospital.	54	6.57 (1.24)	.23	.28*
Position of the mother on the OR table.	53	5.08 (2.06)	-.34*	-.31*
No maternal support person available during the procedure to assist with SSC.	53	5.21 (2.12)	-.32*	-.30*
Monitoring the newborn.	54	4.91 (1.81)	-.43***	-.32*
Newborn having hypothermia after delivery.	54	4.13 (2.31)	-.31*	-.34*
Newborn having health factors requiring treatment (e.g. cardiology, respiratory, resuscitation etc.).	54	6.30 (1.50)	.18	-.03
Newborn needing to be transferred to the Special Care Nursery/NICU/different hospital.	54	6.24 (1.54)	-.06	.23
Location of equipment in the OR (e.g. OR table, general anesthetic machine, baby blankets, baby warmer etc.).	54	4.28 (2.08)	-.40**	-.26
Equipment positioning on mother (e.g. BP cuff, O2 sat	54	4.52 (2.06)	-.35**	-.43**

probe, ECG monitors, Intravenous line).				
Location of support person in OR.	53	3.43 (2.11)	-.19	-.18
Not enough staff in the OR to both perform maternal SSC and complete required OR tasks.	53	5.89 (1.86)	.17	-.03
Tripping or falling risks related to OR setup.	53	4.30 (2.04)	-.05	-.18
Assisting patients to hold the baby causes back, shoulder and muscle strain.	53	4.25 (2.15)	-.10	-.13
Having a Special Care Nursery Nurse initially apply SSC in the OR.	53	5.33 (1.85)	-.22	.02
Delaying newborn assessment including medication administration, weighing and measuring if the newborn is stable.	52	5.54 (1.93)	.43**	.50****
Being provided with education on maternal SSC technique and OR set up.	53	5.38 (1.67)	.28*	.49****
Changing the current OR set up.	53	3.98 (1.97)	.20	.25
Having an appointed leader for maternal SSC in the OR.	52	5.52 (1.86)	.25	.28*

Construct	*n*	Cronbach's α
Perceived Behavioral Control	48	.86

Note. *$p < .05$; **$p < .01$; ***p < .001; ****$p < .0001$

See table 6 for bivariate correlations between control beliefs and intention and, control beliefs and past behavior. A significant small to moderate relationship existed with past behavior and participants reporting that being provided with education on MSSC technique and OR set up is a facilitator to practice. Participants who had done MSSC in the past were more likely to report that they are comfortable and confident with initiating MSSC within 30 minutes after delivery, that policies and procedures influence them to initiate MSSC in the OR, and that delaying newborn assessment is a facilitator to practice.

Participants who had more experience with MSSC in the past reported some barriers to be less difficult, for example: patients feeling shaky; altered maternal movement due to anesthesia, position of the mother on the OR table; no maternal support personal available during the procedure; monitoring the newborn; newborn having hypothermia; location of the equipment in the OR; and equipment positioning on the mother.

Participants who reported that the following barriers made it more difficult to practice SSC were less intent on practicing MSSC in the OR: patient feeling nauseated; patient feeling shaky, position of the mother on the OR table, no maternal support person available during the procedure, monitoring the newborn, newborn having hypothermia after delivery, and equipment positioning.

A facilitator to practice that had a small positive relationship with intention was that having an appointed leader for MSSC in the OR makes MSSC easier. Significant moderate to large relationships existed between intention and the following beliefs as facilitators to practice: participants being comfortable and confident in initiating MSSC in 30 minutes after delivery; delaying newborn assessment; and being provided with education on MSSC technique and OR set up.

Perceived Behavioral Control

The PBC score was determined by calculating the average of 32 out of 35 control belief items previously seen in Table 6. Three items were not included in the PBC score because participants for whom the items were applicable answered them, and if included, this would have limited the sample size for the regression analysis. These items inquired about: the education provided to participants by their employer and whether it was beneficial for their ability to provide MSSC in the OR; if the policy and procedures in their hospitals are

clear and understandable; and, if policies and procedures make it easier for these participants to determine when to perform MSSC in the OR. Out of the 32 control belief items, 24 items were negative stems and scales were reversed before calculating cronbach's alpha and the PBC score. Participants reported having a slightly negative PBC towards MSSC in the OR ($M = 3.18$, $SD = .73$). This construct is normally distributed because mean, median and mode are similar and the skewness and kurtosis are less than three ($M_0 = 3.19$, $M_d = 2.84$, skewness = .36, kurtosis = -.14). A cronbach's alpha of .86 suggests that the control belief items consistently measured the construct of PBC.

The construct of PBC was examined to determine the overall relationships between attitude and: intention; past behavior; pre-operative education frequency; and, pre-operative education duration. Results can be found in Table 4. Significant moderate positive correlations between PBC and past behavior and PBC and intention were found.

Participant Demographics

Correlation and *t*-test analyses were done to determine relationships, and any differences between participant demographics and TPB variables. No significant bivariate correlations were found between age and years of practice with attitude, SN and PBC, past behavior, and intention.

T-tests were completed to examine if there are any differences in attitudes, SN, PBC, past behavior, and intention between educational and employment status groups. Each *t*-test was non-significant.

Regression Analysis Assumptions

Assumptions were examined prior to performing the multiple linear regression (MLR) to determine whether the data was suitable to run a MLR. Field (2009) recommends

to draw assumptions from a sample that the following assumptions should be true: univariate normal distribution; independence of observations; outcome variable continuous; linearity; homogeneity of variance; multicolinearity; and, normal distribution of error.

Univariate Normal Distribution

As described previously under the descriptive analysis of each construct each independent and dependent variable were normally distributed. Therefore, the assumption of univariate normality was met for each predictor and the predicted variable.

Independence of Observations

Each case should come from a separate entity, suggesting the independence of observations (Field, 2009). The independence of observations assumption was not met for this study, since cases were clustered by hospital making them somewhat dependent observations. This suggests TPB constructs could potentially be grouped by hospital due to individual hospitals organizational culture.

Outcome Variable Continuous

Field (2009) suggests that outcome variables should be measured using ratio or interval data or "scale data". The outcome variable of intention was measured by creating an average of the two intention questions that were both measured on a 7-point scale. This intention composite score with series mean imputations was continuous because the data had any numeric value on the scale. Therefore, the outcome variable being continuous assumption was met.

Linearity

According to Field (2009), linearity is the assumption that mean values of the outcome variable with each predictor lies along a straight line. The scatter plots between

attitude and intention; SN and intention; and, PBC and intention followed the line of best fit in a straight line. This assumption was met for linearity between all constructs and intention.

Homogeneity of Variance

The assumption of homoscedasticity refers to equal variance in errors (Field, 2009). The standardized residuals of all predictors (attitude, SN, and PBC) and the standardized residuals of the predicted variable (intention) were examined in a scatter plot created on SPSS. This assumption shows the importance of each predictor to the model looking at the standardized residual and predicted value. Some points appear an equal distance from the line of best fit while others do not, which suggests that there is not an equal variance in error. The line of best fit does not have a slope, and no major funneling of data points were observed. Therefore, the assumption for homoscedasticity was not significant enough to suggest that this assumption was not met.

Multicolinearity

The following assumption refers to the absence of a perfect linear relationship between two or more predictors in order to help appropriately explain the unique variance in the model (Field, 2009). If there is multicolinearity this risks having "untrustworthy *b*s, limits the size of *R* and makes it difficult to assess the importance of a predictor" (Field, 2009, p. 224).

The coefficients and the colinearity diagnostics table were examined for the results regarding the assumption of multicolinearity after conducting the assumptions to the regression analysis in SPSS. The VIF value was close to 1.00 making it an acceptable. All tolerance values were close to 1.00 and above .21: Attitude (.64), SN (.70), and PBC (.80). The colinearity diagnostics table was examined to determine if these constructs load equally

across each dimension. The construct attitude and SN did not load equally therefore the correlations table was observed to determine if any correlations existed that were greater than .80.

Bivariate relationships between the predictor variables attitude and intention ($r = .55$, $p < .0001$); SN and intention ($r = .40$, $p = .002$); PBC and intention ($r = .35$, $p = .006$); attitude and SN ($r = .54$, $p = < .0001$); SN and PBC ($r = .33$, $p = .01$); and, PBC and attitude ($r = .43$, $p = .001$) were examined. No correlation was greater than .80 therefore, there wasn't a strong enough redundancy seen in the correlations between predictors. Attitude and SN did not load equally in the colinearity diagnostics table, therefore a small degree of multicolinearity exists. Overall, this result was not significant enough to suggest that this assumption was not met.

Normal Distribution of Error

The measures of central tendency were examined for the standardized residuals of error. The mean was observed to determine if $M = 0$; this was seen and confirmed. The distribution demonstrates a skewness of -.67 and kurtosis of .12. When examining the histogram with the standardized residuals, the shape of the curve was normal. One possible outlier was discovered; this outlier was acknowledged but no further exploration of outliers to check for significance was completed, since the chance of the outlier effecting the results are small. Due to the above result, normal distribution of error was met.

Most of the following regression assumptions were met; because there were no major violations of the multiple linear regression assumptions, multiple regressions were conducted.

Regression Model

A forced entry multiple linear regression was conducted to determine whether attitude, SN and PBC predict nurses' intention to perform MSSC in the OR. The overall model was significant, $R^2 = .33$, $R^2_{adj} = .28$, $F(3,46) = 7.5$, $p < .0001$. When examining individual predictors, attitude was found to be the most significant, $\beta = .42$, $t(46) = 2.77$, $p = .008$. SN and PBC were not significant. The regression model is shown in Table 7.

Table 7

MLR Analysis Predicting Registered Nurses' Intention to Practice MSSC in the OR

	Intention	
Predictor	R^2	β
Model 1	.33**	
Attitude		.42*
SN		.13
PBC		.13
n	49	

Note. SN = Subjective Norm, PBC = Perceived Behavioral Control
*p< .05, **p<.0001

This suggests that participants that had the most positive attitude would potentially be more likely to intend to perform the behavior of MSSC in the OR.

Performing a stepwise regression, controlling for past behavior, tested the influence of participants' past behavior on intention in the regression model. The overall models were significant: model 1, $R^2 = .27$, $R^2_{adj} = .25$, $F(1,48) = 17.57$, $p < .0001$; model 2, $R^2 = .40$, $R^2_{adj} = .34$, $F(4,45) = 7.36$, $p < .0001$, $\Delta R^2 = .13$, $p = .03$. In the full model both past behavior, $\beta = .33$, $t(45) = 2.25$, $p = .03$, and attitude, $\beta = .37$, $t(45) = 2.52$, $p = .02$, were significant predictors of nurses' intention to practice MSSC in the OR and attitude was the strongest predictor. The regression model is shown in Table 8.

Table 8

MLR Predicting Registered Nurses' Intention to Practice MSSC in the OR Controlling for Past Behavior.

	Intention to Practice MSSC in the OR	
Predictor	ΔR^2	β
Model 1	.27***	
Past Behavior		.52**
Model 2	.13*	
Past Behavior		.33*
Attitude		.37*
SN		-.01
PBC		.08
Total R^2	.40*	
n	49	

Note. SN = Subjective Norm, PBC = Perceived Behavioral Control
*p<.05, **p<.0001

Additional Suggested Behavioral, Normative and Control Beliefs

For each TPB construct, participants were provided with the option to add their own items and asked to rate and specify the responses they provided. The participants used a 7-point likert scale to rate their responses as used throughout the specific TPB construct sections of the survey. These were exploratory and were not included within the analysis.

Some participants' suggested additional benefits to MSSC in the OR within the construct of attitude, these included: increased colostrum production; promotes breastfeeding; calms and distracts the parents from OR activity; and, reassures parents baby is okay. Three participants suggested that MSSC stabilizes newborn blood glucose. All suggested benefits were rated an average of 6.4 out of 7, suggesting they strongly agree that these are additional benefits to MSSC. One participant strongly believed that there is too

much to do in the OR and the priority is to accurately count and document completely, which affects the practice of MSSC.

Participants suggested that two other individuals might approve of MSSC in the OR. These individuals were respiratory therapists and surgical assistants, with two responses each. Respiratory therapists were suggested to strongly approve of MSSC in the OR, with an average rating of 6.5 out of 7, and surgical assistants were suggested to approve of the practice with an average rating of 5.5 out of 7.

The following situations were suggested to make it difficult to practice MSSC. Clinical situations that two participants suggested would make it difficult to practice MSSC in the OR included: "the anesthesiologist opinion" and, "anesthesia don't like us in their space". This may suggest that participants believe anesthetists may have had a negative opinion about the practice, which is believed to be a barrier to practice. Other clinical situations that participants indicated would make it difficult to practice MSSC in the OR included: if the mother changes her mind after delivery; if she has a non confident support person; and, that the patient's arms are less mobile with blood pressure cuff, intravenous and oxygen saturation probe etc. All of these situations were rated on average 7 out of 7 by participants.

Environment issues suggested by participants as being a barrier to practice included: "assistant and or surgeon does not have enough room to work"; and, "issues with OR sterile draping" with an average rating of 6.5 out of 7. One participant asked "the OR blue drape is positioned up to chest where can we put baby… across the mothers neck?", this response did not have a rating.

Personal and OR safety issues reported by participants with their ratings included: “not enough personnel in OR to monitor safety of baby”; “utilizing anesthesia space forcing doctor to move away from patient”, which may cause patient and staff safety issues during suturing; and that having an extra staff member in the OR would help with OR counts and documentation. All these safety issues were rated 7 out of 7.

Suggested facilitators that would make it easier for the practice of MSSC in the OR included: more support from co workers; a dedicated RN to initiate, assist and monitor skin to skin; and, increasing personnel in the OR. The average rating of these responses was 6.7 out of 7, suggesting participants strongly agreed these to be facilitators to practice.

Thematic Content Analysis and Open Ended Responses

Participants were provided with two open ended questions at the end of the paper and electronic survey: (1) provide one of the best ways to minimize the barriers to MSSC in the OR, and (2) provide one of the best ways to maximize the facilitators to MSSC in the OR.

A total of 38 individual participants provided open-ended responses regarding the best way to minimize barriers to practice, and a total of 31 participants provided open-ended responses for the best way to maximize facilitators to practice. Some participants provided more than one suggested way to minimize barriers or maximize facilitators to practice for each question, and some participants provided the same response for both of the open ended questions

All of the responses were read and re-read to gain an understanding of the data before making any thematic connections. When reading the open-ended results for a second time participants’ responses were grouped under broad themes, then sub themes.

All of the responses were organized into broad themes and sub themes regarding the best ways to minimizing barriers and maximize facilitators to MSSC in the OR. These themes were based on similar content, and the information reflected both in the literature reviewed and my personal experiences with the practice. Refer to Tables 9 and 10 for the frequency of each theme.

Table 9

Broad Themes and Sub Themes with Frequency of Responses for Minimizing Barriers

Broad Theme	Frequency (*n*)	Sub Theme	Frequency (*n*)
Additional Staff	11	Dedicated Nurse/Team Leader	8
Education	10	Interdisciplinary/Staff Education	4
		Patient Education	3
		Educate Obstetricians	1
Support	6	Support from Anesthesia	5
		Support from Obstetricians	2
		Support from RN	1
Communication with Staff	4	--	--
Developing a Policy and Procedure	3	--	--
Management of Equipment	2	--	--
Unsafe Practice	2	--	--
Receiving baby in OR as soon as possible	2	--	--
Communication with Patient	1		
Lack of Time	1	--	--
Maternal Status	1		

Table 10

Broad Themes and Sub Themes with Frequency of Responses for Maximizing Facilitators

Broad Theme	Frequency	Sub Themes	Frequency
Additional Staff	21	Additional RN	9
		Dedicated Team Leader	4
		Special Care Nursery Nurse	4
		Lactation Consultant	2
Education	6	Educate Staff	5
		Educate Patients	2
Necessary Equipment and Space	3	--	--
Demonstrate SSC in OR	2	--	--
Support of Nurses	1	--	--
Safety Concerns Reporting Patient Satisfaction	1	--	--

The most commonly suggested way to minimize barriers and maximize facilitators to the practice of MSSC in the OR was additional staffing. Suggestions for additional staff members included RNs, special care nursery nurse, a lactation consultant or any dedicated team leader. Participants reported that these extra staff members could help support the practice of MSSC in the OR. Two participants suggested having a dedicated extra RN to stay in the OR until the first count or during the full duration of the cesarean section.

Participants believed education was also important in order to minimize barriers and maximize facilitators to practice, specifically by providing education to obstetricians, other interdisciplinary staff, and patients about MSSC practices in the OR. Education examples to help minimize barriers to practice included providing staff with educational videos, and evidence on the benefits of MSSC and the best time to initiate MSSC in the OR. Similarly, a

participant reported timing and conditions of when MSSC should be initiated needs to be clarified through education provided to staff. Participants also suggested that patients should be aware that it might not always be feasible to do MSSC in the OR due to safety such as situations where staffing levels are not sufficient or if there is an emergency. Demonstration of how to do MSSC in the OR was suggested as a facilitator to practice. One participant also encouraged MSSC to be done with every patient if possible.

Support from anesthesiologists, obstetricians and RNs was also considered as important towards minimizing barriers to practice, whereas participants reported nursing support as a way to maximize facilitators.

There were also some less frequently reported themes that may further minimize barriers to practice. Participants believed that communicating with staff by increasing discussion of the practice prior to entering the OR, and discussing the feasibility of the practice might encourage the practice of MSSC in the OR. Only one participating hospital had a policy and procedure regarding MSSC in the OR. Participants suggested that developing a policy and procedure might minimize barriers to practice. This may help provide a guideline for nurses regarding when or when not to initiate MSSC in the OR.

Participants reported that there are environmental barriers to practice in regards to equipment. A participant suggested that, in order to minimize this barrier to practice, equipment should be moved to accommodate for MSSC in the OR and another suggested that freeing moms' arms from the blood pressure cuffs would minimize the barriers to practice. Having enough room to place the baby on the mother's chest, having an appropriate chair, and having the infant warmer in the same room as the mother were also suggested as ways to maximize facilitators to practice.

MSSC in the OR being an unsafe practice was also reported by two participants as a barrier to practice due to understaffing and misunderstanding of responsibilities regarding whether the anesthetists or the nurse should be monitoring the newborn when in MSSC. A participant reported that when a father is expected to hold the baby this maybe a safety concern. This participant suggested that a father might not be confident enough to hold the baby in a safe position on mom.

Participants reported that in order to enhance the practice of MSSC in the OR, stable newborns should be going directly to the mothers for MSSC rather than out of the room for their assessment. This practice may enhance MSSC since it is not commonly practiced in all hospitals. Participants also suggested that the baby should also be brought back into the OR as soon as possible after all assessments have been completed.

Participants occasionally referenced specific facilitators and barriers to practice without mentioning ways to overcome them. These barriers included: lack of time to initiate MSSC in the OR, and maternal anxiety or a mother feeling unwell.

After analysis of the quantitative and qualitative data some similarities have been identified. Key themes were integrated to look for points of convergence and divergence similar to the mixed method convergent design (Creswell & Clark, 2011). Converging themes include: additional staffing, education, support and developing a policy and procedure. Diverging themes include: insufficient staff makes it difficult to perform the behavior, and lack of time to perform the behavior. These themes helped emphasize the importance of specific facilitators and barriers to practice, and the open-ended question provided an extension of topics that were not covered in the quantitative analysis.

In the quantitative analysis nurses agreed that not enough staff in the OR makes it

difficult to both perform MSSC and complete required OR tasks. However, there was no relationship between nurses' perception of staffing and nurses' MSSC past behavior or intention, suggesting staffing levels were irrelevant to their practice. The most frequent suggestion for minimizing barriers and maximizing facilitators to practice was additional staffing, in particular adding a team leader. The quantitative analysis suggested that an appointed leader would facilitate MSSC in the OR. In the open-ended responses, a number of nurses suggested a team leader would be one of the best ways to minimize barriers and maximize facilitators to practice. Therefore, the open-ended questions helped to further identify that nurses believe a team leader would facilitate the practice of MSSC in the OR.

Both the quantitative and qualitative analyses suggested that being provided with education would facilitate the practice of MSSC in the OR. The qualitative analysis added information about who nurses believed should be educated about MSSC in the OR. Specifically nurses mentioned that the entire health care team and patient should be provided with education. The quantitative analysis identified that many nurses do not believe their hospitals provide patients with sufficient written information to educate them about MSSC in the OR, suggesting the need for further patient education. The quantitative analysis identified that many nurses were never supervised in the technique to perform MSSC in the OR. In the qualitative analysis two participants suggested that demonstrating MSSC in the OR would help maximize facilitators to practice.

The quantitative analysis suggested that support from a variety of health care team members' would help facilitate the practice of MSSC in the OR. The qualitative responses focused more specifically on the support from anesthesia, obstetricians and RNs. In particular, it was suggested that support from anesthesia, obstetricians and RNs would help to

minimize barriers to practice, whereas RNs support would also help maximize the facilitators to practice.

The quantitative analysis identified that over half of nurses do not have policy and procedure for MSSC in the OR. In the qualitative analysis nurses reported that developing a policy and procedure would help minimize barriers to practice.

The quantitative analysis indicated that, on average, nurses were uncertain whether there is enough time to initiate MSSC in the OR. In the qualitative analysis, one participant suggested lack of time to be a significant barrier to practice. However, the quantitative analysis also indicated that the more nurses had practiced MSSC in the past the less they believed there was not enough time to initiate MSSC in the OR after delivery. This suggests that the perceived lack of time may be most important for nurses without experience.

In addition to addressing the common themes, the qualitative analysis provided new information about ways to minimize barriers and maximize facilitators to MSSC in the OR. These included: staff and patient communication, management of and providing additional equipment in the OR, making enough space on mom's chest for SSC in the OR, support of nurses' safety concerns, clarification of nurses' roles and responsibilities, and ensuring a confident support person to keep baby in a safe position on mom.

Chapter 5: Discussion

This chapter will provide a detailed discussion of the research findings and recommendations for practice and knowledge dissemination. This study aimed to identify, examine and quantify Registered Nurses' opinions about the barriers and facilitators to MSSC in the OR using the TPB as a conceptual guideline (Ajzen, 1991; Ajzen, 2011). The study confirmed that the TPB could be applied to the practice of MSSC in the OR and was effective in predicting nurses' intention to practice this behavior.

The only independently significant predictor of nurses' intention to practice MSSC in the OR was nurses' attitude. SN and PBC accounted for some variance explained in intention (albeit not significantly in the multiple regression model). Moderate bivariate correlations between these two constructs and intention suggest they are also important for the continued practice of MSSC in the OR. Also attitude, SN, and PBC were also fairly highly inter-correlated with each other. However, attitude explained unique variance in intentions not explained by SN and PBC. Attitude was also a more important predictor of nurses' intention to practice MSSC in the OR than nurses' past behavior. This suggests that the effect of nurses' past behaviors on intention is partially due to the effect that experience with the practice has on nurses' attitude. Therefore, in order to understand nurses' intention to practice MSSC in the OR, the best solution is to understand their attitude towards the practice, followed by their SN and PBC. Fishbein and Ajzen (2010) suggest "… an intervention will be most effective if it targets the component that carries most of the weight in predicting intentions" (p. 332).

The theory of KTA suggests that knowledge about facilitators and barriers that can be used to make recommendations to facilitate the implementation of knowledge to action.

Thus, the results of this study can be used to generate general recommendations that may influence nurses' behavior, as well as their intention to practice MSSC in the OR by influencing nurses' attitude, SN and PBC. Hospital supervisors can further tailor these recommendations to make them more specific to their context in order to help implement MSSC in the OR more effectively. The KTA action process is reflected in the recommendations that will be presented in this discussion. Due to the exploratory nature of this research recommendations should be interpreted with caution.

The Practice of MSSC

This study found nurses' overall intention towards the practice of MSSC in the OR with scheduled term elective cesarean sections was positive. Nurses who actually practiced MSSC in the past were more likely to intend to continue practicing MSSC in the future. This confirms the theoretical underpinnings of the TPB that past behavior is the best predictor of intentions and future behavior (Ajzen, 1991). The actual behavior of MSSC in the OR was not observed in this study, although information about nurses' past behavior and awareness of current hospital practices was obtained.

Nurses reported that the practice and education about MSSC in the OR is not as consistent as the practice and education of MSSC after vaginal deliveries. All nurses reported that their unit is currently practicing MSSC with vaginal deliveries, whereas slightly more than half of the nurses reported that their unit is practicing MSSC in the OR.

Almost all nurses reported having education on MSSC after vaginal deliveries, whereas only approximately half had education regarding MSSC after cesarean deliveries. Education provided about MSSC in the OR should also be provided along side with MSSC

after vaginal deliveries, suggesting the need to increase education provided about MSSC in the OR.

This study found that 40% of nurses stated they were never in the role where they were expected to provide MSSC in the past two months. This may suggests some nurses may be unaware of whose responsibility it is to practice the behavior causing a barrier to practice. Burke-Aaronson (2015) mentions that there is no identification of who is responsible for the safety and well being of the infant while in MSSC. The roles and responsibilities regarding the practice of MSSC in the OR should be further clarified with education by explaining and designating roles, and providing guidance of the practice. However, with a normal cesarean delivery there is always someone in charge of the newborn post delivery. This should be the same person taking charge of MSSC in the OR, and monitoring the newborn.

More than half of nurses surveyed had never practiced MSSC in the OR in the two months previous to survey completion. Nurses who reported actually practicing MSSC in the OR estimated that, on average, it took them 9 minutes to initiate MSSC. However, when all participants, including nurses who have not practiced MSSC in the OR, were asked how long it should take to initiate MSSC, the estimate was closer to 13 minutes. When performing a *t*-test with past behavior and nurses estimated initiation time nurses who have practiced MSSC in the past estimated it should take 8 minutes to initiate MSSC in the OR compared to 17 minutes for nurses who have not practiced the behavior. The estimates regarding the time to MSSC initiation are consistent with recommendations such as initiation of MSSC during abdominal closure (Montgomery, Hale & Academy of Breastfeeding Medicine Protocol Committee, 2006) or within a half hour after delivery (WHO, 1998). Therefore, changes are

being made with regards to the initiation time of MSSC in the OR, yet more nurses' need to continue to practice the behavior.

Further changes that need to be made involve patient education about MSSC in the OR. Almost three fourths of nurses reported that their hospital does not provide written information to educate patients about MSSC in the OR. Patient education is highly important and necessary for the practice of MSSC since they are the core and most important member of the team (Brady et al., 2014; Phillips, 2013; Stevens, Schmied, Burns & Dahlem, 2014). Participants also reported patient education to be important towards minimizing barriers and maximizing facilitators to practice in the qualitative analysis. Nurses who practiced MSSC in the past and were more intent to practice in the future were more likely to have provided their patients with pre-op education and for a longer period of time. This suggests that pre-operative education may be already engrained into nurses who are more often practicing the behavior.

Therefore, valuable information about nurses' behavior regarding the practice of MSSC in the OR was discovered. Nurses' overall attitude, SN, and PBC govern this behavior (Ajzen, 1991; Ajzen, 2010).

Recommendations to Shift Nurses' Attitude

According to the TPB, attitude is developed based on behavioral beliefs formed by an individual about a given behavior. The more positively that someone views the behavior the more likely they will intend to and then perform the behavior (Ajzen, 1991; Ajzen, 2011). The current study found that nurses' have a positive attitude about MSSC in the OR and that their attitude is a strong predictor of MSSC behavior. These nurses also believed they were

advocates for performing MSSC in the OR. Therefore, this section will discuss nurses' behavioral beliefs and address ways to shift nurses' attitude about MSSC in the OR.

Nurses believed that there are favorable newborn and maternal outcomes to MSSC in the OR. They believed that MSSC in the OR had a positive outcome on newborn respiratory rate, heart rate, crying and breastfeeding. Nurses also believed that MSSC had positive outcomes on the mother by making them more satisfied, confident and less anxious. If they believed in these positive maternal outcomes they were more likely to have practiced MSSC in the past and intend to practice MSSC in the OR, although positive newborn outcomes only had an effect on nurses' intention to practice MSSC in the OR. Therefore, maternal outcomes are found to be more influential on nurses' intention and past behavior, suggesting the mothers experience to be important to nurses practicing the behavior. This is similarly reflected in the literature where nurses believed providing a positive maternal experience after a cesarean section was an important part of patient care (Bayes et al., 2012; Carefoot et al., 2005; Chalmers et al., 2010; Smith et al., 2008). Nurses who believed that MSSC did not allow for appropriate patient privacy were less likely to intend to practice MSSC in the OR, although overall nurses' believed privacy is typically maintained during MSSC in the OR.

Nurses' beliefs about favorable maternal outcomes may have been obtained through patients' feedback during or after the practice of MSSC in the OR. Semenic et al. (2012) and Baby Friendly Initiative Ontario (BFIO) (2014) suggest that patient feedback is an important tool for implementing BFI practices. Wallin et al. (2005), and Semenic et al. (2012) suggested that patient feedback could create motivational change. In the qualitative analysis of this current study one participant suggested that reporting patient satisfaction might be a method to maximize facilitators to practice. Therefore, having a way to collect patient or

partner feedback on comment cards via email or while in the recovery room, and being able to distribute this information to staff via email, bulletin boards, or generating screen savers on each computer on the unit with direct patient quotes with patients' permission could help nurses believe they are making an impact on each patient, partner, and newborn that has been provided with MSSC in the OR. This may motivate nurses by shifting their attitude about MSSC in the OR and increase the practice of the behavior.

Nurses also believed the practice of SSC in the OR to be professionally satisfying and a positive experience. The more they held these beliefs, the more likely they were to be practicing MSSC in the OR, and they were also more intent on performing the behavior. Nurses who believed that MSSC immediately after delivery was a feasible and safe practice were also more likely to have practiced and intend to practice MSSC in the OR. Previous literature reviewed suggested that nurses' perceptions regarding patient safety is an important factor for determining whether they practice MSSC in the OR (Dabrowski, 2007; Gouchon et al., 2010; Smith et al., 2008) and on the NICUs (Chia et al., 2006; Enlger et al., 2002) due to the acuity of patients and newborns after delivery. Similarly, Crenshaw et al. (2012, as cited in Stevens et al., 2014) suggests focusing on the importance of safety before implementing immediate MSSC in the OR. Moore et al. (2012) suggest no documented negative effects of SSC. Stevens et al. (2014) reports a few cases regarding newborn instability while performing SSC, but there is also a possible risk of newborn instability due to the mode of delivery. Therefore, MSSC should not increase the risks any more than the risks involved with a cesarean delivery. Further investigation is needed regarding the safety of MSSC in the OR, however many practice change projects have safely initiated MSSC in the OR (Brady et al., 2014; Brady et al., 2013; Dabrowski, 2007; Keller & Brenneman, 2012; Magee et al.,

2014; Fortin, 2012; Smith et al., 2008; Stone et al., 2014; Zauderer & Goldman, 2012). These behavioral beliefs were very important for nurses' past behavior and intention to practice MSSC in the OR and should be emphasized to staff using literature to support the safety, feasibility and professional satisfaction of MSSC in the OR. Self-evaluation such as reflecting on one's own practice would allow for an opportunity for nurses to address negative experiences about the practice of MSSC in the OR, which may be helpful in changing a nurse's attitude about MSSC in the OR (Royal College of Nursing, 2015).

Most nurses disagreed that MSSC in the OR prevents them from administering vitamin K and or eye ointment. Nurses may have reported this because medication administration is not always done in the OR and is delayed in some hospitals until the patient gets into the recovery room. According to unit managers, all hospitals that participated in this survey encouraged delays in medication administration until one hour after delivery. The PCMCH (2013) indicates that Vitamin K administration can be delayed for up to six hours after birth and erythromycin can be delayed up to one hour. However, data about medication administration practices may be useful for future MSSC studies to understand if medication administration delay makes a significant difference in the time it takes to initiate MSSC in the OR.

Nurses' were uncertain if there is enough time to initiate MSSC in the OR and uncertain if immediate MSSC was feasible, yet they believed that initiating MSSC within 30 minutes is feasible. Chia et al. (2006) mentioned that nurses have speculated there not being enough time to initiate SSC with preterm newborns (Chia et al., 2006). Dabrowski (2007) also mentions that time constraints due to procedure completion was a barrier to MSSC practices in the OR. However, this study indicates the more nurses practiced MSSC in the

past the less they believed there was not enough time to initiate MSSC in the OR after delivery. Not having enough practice with MSSC in the OR may affect the nurses' perception about the amount of time they have to facilitate the practice.

Providing staff with appropriate resources, training, and skills on MSSC in the OR can shift their attitude by providing them with the appropriate overall knowledge about the behavior (Fishbein & Ajzen, 2010). Stevens et al. (2014) suggested there might be apprehension to the implementation of MSSC in the OR if there is no education provided. There may be insufficient education and understanding about MSSC in the OR because MSSC in the OR has not been as widely practiced as MSSC after vaginal deliveries. Therefore, educational programs may be lacking information pertinent to the practice of MSSC in the OR.

Evidence-based resources should be provided to nurses. Educational posters on the unit may play a role in shifting nurses' attitude by providing nurses with easily accessible evidence and information regarding MSSC in the OR. Seeing this information every day might make nurses more inclined to change their attitude about the practice, and make patients more inclined to ask about MSSC in the OR, suggesting this recommendation to have not only an affect on nurses' attitude but also their SN. The posters may also remind nurses to practice MSSC in the OR in turn affecting their behavior.

Almost half of the nurses who participated in this study did not take the time to pre-operatively educate their patients about MSSC in the OR. This may also be related to nurses not having appropriate training on how to educate their patients. Nurses may also be worried that they may disappoint their patients if they are unable to initiate MSSC in the OR. This worry may be a reason why nurses do not educate their patients. Nurses' attitude may also be

affecting their pre-operative education with their patients because they may not believe education about MSSC in the OR to be as important as other pre-operative educational topics; this was not measured in this study but would be an interesting topic for future research. Nurses should be provided with the appropriate evidence to share with their patients pre-operatively and they should also be trained on how to appropriately pre-operatively teach their patients about MSSC in the OR.

Educational methods to help teach nurses about MSSC in the OR that may be beneficial to shift nurses' attitude include: grand round presentations; online learning modules (Brady et al., 2014); mini in-services available to staff for reference regarding the practice of MSSC in the OR; creating and circulating a flow chart outlining MSSC in the OR process (Hung & Berg, 2011); having a clinical leader develop and present the benefits to MSSC in the OR (Dabrowski, 2007); current unit specific facilitators and barriers to practice; and, providing staff access to educational videos. Some current educational videos to help educate staff about the behavior include: "Breastfeeding Your Baby After a Cesarean Birth" (Trillium Health Partners, 2014), and a video by Brimdyr, Svensson and Windstrom (2010) entitled, "Skin-to-Skin in the First Hour: Practical Advice for Staff after Vaginal and Cesarean Birth". The BFI Toolkit (2014) created by the BFIO suggests many other helpful techniques to provide education on a daily basis such as: "emails; minutes; bullet rounds or huddles; activities in staff room; staff skill days; and, weekly information newsletters" (p. 53).

Therefore, in order to improve nurses' intention to practice MSSC in the OR there should be emphasis on self evaluation and reflection on the practice, patient feedback about the practice should be obtained and disseminated to confirm their positive beliefs about

maternal and newborn outcomes, each nurse should be provided with more MSSC experience, and education should be provided to increase nurses' knowledge about the practice using evidence based resources in order to shift nurses' attitude regarding MSSC in the OR.

Recommendations to Shifting Nurses' SN

According to the TPB, the opinions of health care team members who are important to the person performing the behavior can create social pressures that influence that individual to determine whether or not to perform the behavior (Ajzen, 1991; Ajzen, 2011). The current study revealed that SN plays a role in nurses MSSC practices in the OR. According to Ajzen (1991) previous studies have shown that SN may be both a strong and weak predictor of intention.

This study had one question within the normative belief items asking about their hospitals organizational culture and whether it influences their practice. Participants believed the organizational culture has a small influence on their initiation of MSSC in the OR. When participants believed this they were more intent to practice the behavior. A better understanding about how the organizational culture influences the behaviors of staff should be explored in the future.

When nurses believed others approved of the practice; they were more likely to practice MSSC in the past and intend to practice the behavior. Nurses believed they had approval from almost all of the health care team members, patients, and patients' support persons about the practice of MSSC in the OR, which mattered to them.

Nurses believed that the individuals who provide the most approval towards the practice of MSSC in the OR were lactation consultants, followed by managers and

administration (e.g. Program Director). Interestingly, lactation consultants' approval was not related to nurses' past behavior and intention, possibly suggesting that everyone understands the role of lactation consultants and their substantial support and encouragement of the practice. It is also important to note that responses from the item asking whether lactation consultants approve of the practice had a small standard deviation, therefore potentially not allowing enough variance in the item to result in a relationship with other items. According to Wallin et al. (2005) managers who are actively involved in the process of MSSC implementation on their unit made a difference in MSSC guideline implementation, and in the literature review by Semenic et al. (2012) managerial and administrative support were suggested as facilitators to BFI implementation. Nurses also believed that their labour and delivery colleagues somewhat approve of the practice of MSSC in the OR. This should empower nurses to work together as a team to enhance the practice.

Overall nurses, on average, believed obstetricians slightly approved of the practice but were uncertain if anesthesiologists approve or disapprove of the practice. However, nurses who had practiced MSSC in the past were more likely to perceive that all physicians approved of MSSC in the OR but only anesthesiologists' approval was associated with intention to practice in the future. Wallin et al. (2005) and Semenic et al. (2012) discussed the importance of physician support for implementing MSSC practices and BFI practices, such as MSSC within 30 minutes after delivery. Wallin et al. (2005) also described that when a physician would support the practice of MSSC, this would in turn have a positive impact on the parents. Dabrowski (2007) perceived resistance from anesthesiologists and neonatologists prior to their practice change project; this changed after implementing MSSC practices. In another practice change project, it was believed that there may be resistance from

anesthesiologists and obstetricians regarding the practice of MSSC in the OR, but once their issues/barriers about the practice were addressed (e.g. more space at the head of the OR table) they were open to the practice (Stone et al., 2014). Brady et al. (2014) discussed that, during the planning process of their quality improvement project, obstetricians had concerns about aseptic technique when performing immediate MSSC in the OR. Anesthesiologists were also concerned that they would have to monitor the newborn while in MSSC, and nurses were concerned about newborn thermoregulation and the patient's ability to hold the baby when in MSSC in the OR (Brady et al., 2014). These barriers were discussed as a team and were solved as a team (Brady et al., 2014).

The National Institute for Health and Clinical Excellence (2007) suggest that interactive meetings are more likely to cause a change in behavior. Allowing nurses and other health care team members to discuss their issues with MSSC in the OR via interactive team meetings could further enhance nurses' beliefs that they have the support from their health care team members, which would further encourage nurses' to practice MSSC. Therefore, the use of a needs assessment during the team meeting may help the entire health care team address barriers and facilitators that are unit specific (RNAO, 2012). BFIO (2014) suggests the use of a force field analysis as a way to discuss and manage individual issues by identifying strong and weak facilitators and barriers to practice. This would further increase interdisciplinary collaboration, and build on the support already provided from other health care team members. Nurses also suggested interdisciplinary education may help minimize barriers and maximize facilitators to practice. This includes providing education to all health care staff, including surgical assistants, respiratory therapists, and midwives. These health care team members' approval of the practice was not measured in this study, although they

were suggested to be important. Recent literature has emphasized the importance of education for MSSC in the OR in order to facilitate the practice (Brady et al., 2014; Brady et al., 2013; Hung & Berg, 2011; Dabrowski, 2007; Phillips, 2013; Stevens et al., 2014). Brady et al. (2014) suggest that " . . . education across all disciplines is necessary for facilitating change in any setting" (p. 491). Having interdisciplinary team meetings and educational opportunities would create a sense of approval and importance of the behavior. If everyone could participate in the team meetings and receive education about the practice, everyone would believe that this is an important behavior to begin or continue to keep practicing.

BFIO suggests chart audits can be a good management tool for implementing BFI practices (Semenic et al., 2012; BFIO, 2014). Collecting data from chart audits and distributing the results to nurses' could shift nurses' SN about the practice by providing evidence that other nurses are practicing the behavior. Evidence from these audits could also be shared to acknowledge whether the practice is positively changing and/or being sustained, or suggest that there is still a need for improvement.

Encouraging nurses to initiate MSSC in the OR as soon and as often as possible could be increased with friendly competition. Collecting information on how fast each individual nurse initiates the practice and who is more often practicing the behavior could be obtained by viewing patient records through electronic documentation. Nurses who are initiating MSSC the fastest and the most often would get a small token of appreciation, which could also help motivate others to start shifting their practice by seeing that others are receiving rewards for their behavior. Having staff members see the shift in practice and setting a goal each month could also allow them to recognize that all their hard work and education has been worthwhile. Therefore, this friendly competition would make nurses more aware of

their peers' practice and support of MSSC in the OR, which would make individuals see that others are practicing the behavior and approve of the behavior, which could in turn influence others practice and opinion about the behavior. Providing rewards for the behavior may also make them feel more positive about the behavior, in turn also affecting their attitude.

The approval of patients and partners was also related to stronger intentions to practice MSSC in the OR. Increasing health-teaching opportunities might have an affect on nurses' SN by having more patients recognize the practice of MSSC in the OR to be beneficial and ask for MSSC in the OR, which would suggest patients' approval of the practice. Providing patients with written information to take home with them pre-operatively would allow for more dialogue between patients and nurses the day of delivery. Brady et al. (2014), and Hung and Berg (2011) suggested pre-operative education gives nurses the opportunity to help explain the benefits of MSSC and obtain consent from the patient prior to MSSC initiation. Posters may be beneficial for both educating nurses' and patients about MSSC in the OR. Smith et al. (2008) discuses another method to enhance patient education; this includes the use of video clips to show patients the technique of MSSC in the OR. One example of a video is "The Magical Hour: Holding Your Baby Skin to Skin During the First Hour after Birth," which provides detailed information regarding MSSC practices and patient's personal experiences with the practice (Phillips, 2013). These videos could be available in the waiting rooms, assessment rooms and individual patient rooms free of charge. As patients become more informed, they may be more inclined to ask for MSSC in the OR. Whether patients are asking about MSSC in the OR and how educated they are about the practice would be an interesting topic for future research.

If nurses believe others support the practice and are actually performing the behavior, this may change their intention to practice MSSC in the OR. Therefore, in order to influence nurses' intentions to practice, there should be interventions in place to show support, application and appreciation of the practice. These may include and is not limited to: interactive team meetings, collecting data from chart audits, promoting friendly competition/providing rewards, educating the entire health care team and patients, and encouraging different forms of pre-operative education for patients.

Recommendations to Shifting Nurses' PBC

The TPB suggests if a behavior is easy to practice and all the resources and knowledge are in place an individual will be more likely to intend to and actually perform the behavior (Ajzen, 1991). This study discovered that nurses are uncertain if they have full control of when or when not to practice MSSC in the OR. This may be due to the barriers being too strong and the facilitators potentially not making it easy enough to apply MSSC in the OR. However, the more nurses practiced MSSC in the OR, the more they perceived the practice to be easy and in their control. Similarly, the more control nurses perceived, the more they intended to practice MSSC in the OR. Therefore, facilitators to practice need to be more utilized in order to increase the nurses feeling of control when applying MSSC in the OR.

Nurses who believed they were comfortable and confident with initiating MSSC within 30 minutes after delivery were more likely to have practiced MSSC in the OR in the past and were more intent on practicing MSSC in the OR. This suggests that the more experience nurses had with the behavior, the more nurses' confidence and comfort in the practice continued to improve. The relationship with past behavior, and nurses' comfort and

confidence in initiating MSSC within 30 minutes confirms Bandura and his colleague's findings that "people's behavior is strongly influenced by their confidence in their ability to perform it" (Ajzen, 1991, p. 184). This confidence could be built with further education, supervision, and continued initiation of the practice.

Over three fourths of nurses reported not being supervised in the technique of MSSC in the OR before performing the behavior. Supervision provided by a nurse leader on staff may increase confidence. Stone et al. (2014) reported bedside nurses as part of a champion team were effective in facilitating practice change. Supervisors could occasionally evaluate nurses' practice and suggest ways to overcome barriers when performing the behavior, in turn making the practice easier. Hung and Berg (2011) had their Perinatal Clinical Nurse assist nurses with positioning the infant with their first few cases. Nurses also slightly agreed that being provided with education on MSSC technique and OR set up would make it easier for them to practice MSSC. Nurses who believed being provided with education on the technique and OR set up was a facilitator to practice were also more likely to have practiced MSSC in the past and intend to practice the behavior. This may suggest both education and supervision could potentially change nurses' perception of the barriers to practice making it easier to perform the behavior.

The biggest reported barriers to practice included maternal problems such as dry heaves and or vomiting, breathing difficulties, incoherence, post partum hemorrhage, newborn problems such as newborn instability, and the need for newborn transfer. There were no correlations between these items and nurses' past behavior and intention. This may have been potentially due to the high scale score for each of these items and the limited

variance in the items. These types of barriers may be why nurses believe they don't have overall control of when or when not to initiate MSSC in the OR.

If the mother and newborn are not stable when trying to initiate MSSC in the OR this may cause a substantial barrier to practice. Post cesarean section newborns are known to have an increased risk of lower Apgar scores, respiratory problems and hypoglycemia (Karlstrom et al., 2013 as cited by Stevens et al., 2014). Therefore, these barriers may be perceived as difficult to control since most are potential side effects of anesthesia or complications that arise post cesarean section. It might be important to understand the frequency of occurrence of these events, and whether MSSC in the OR actually increases these risks in these cases.

One way to gather such information might be to use the electronic documents that some hospitals have. The circulating nurses fills out this electronic document on the computer in the OR during a cesarean section procedure. Patients having a cesarean section are required to have a record of everything that occurs in the operating room during their procedure. A recommendation could be to include mandatory cells in the patient's electronic document to collect patient data regarding: the amount of time that lapses after the delivery of the newborn to the completion of the procedure, whether MSSC in the OR was initiated; what time they initiated MSSC in the OR; when and why they stopped MSSC; if they initiated SSC with dad; and/or, why they did not initiate SSC in the OR. Collection of information regarding why MSSC was not initiated would allow the interdisciplinary team to see the common barriers that are hindering the practice of MSSC in the OR. This would allow units to identify their biggest barriers to practice and suggest ways to overcome these barriers, in turn making the practice easier. Information regarding the frequency of barriers

actually affecting the practice of MSSC in the OR would also be an interesting topic for future research.

This study found that, with experience, nurses would perceive some barriers as less difficult, suggesting further need for experience with the practice. The barriers that were less difficult with experience were: the patient feeling shaky, altered maternal movement due to anesthesia, maternal positioning on the OR table, no maternal support person available during the procedure, monitoring the newborn, newborn having hypothermia, location of equipment in the OR, and equipment positioning. However, nurses who did think these barriers made MSSC more difficult were less intent to practice MSSC in the OR. Education may be needed in order to help nurses' overcome these maternal and newborn barriers to practice.

Nurses' believed not having enough staff in the OR to both perform MSSC and complete required OR tasks is another big barrier to practice. The most commonly suggested way to help minimize barriers and maximize facilitators to practice found through the qualitative analysis was to have additional staffing when performing MSSC in the OR. Dabrowski (2007) and Crenshaw et al. (2012, as cited in Stevens, 2014) also confirm that more staff may be needed to facilitate MSSC practice in the OR. Following the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) staffing guideline recommendations of a two to one ratio prior to delivery of the newborn may help facilitate MSSC practices (Brady et al., 2014). Hung and Berg (2011) suggest "charge nurses and managers can help with implementing MSSC in the OR, which helps the staffing model" (p. 323). Brady et al. (2014) suggest the utilization of a transition nurse to stay with the baby at all times to help apply and monitor MSSC practices. Participants in this current study

suggested a team leader would be an important facilitator to practice. It is unknown if nurses believed this team leader should be an additional staff member in the OR or a designated member who already exists within the current OR team. It is also uncertain if the hospitals that participated in this study had appropriate staffing levels according to the recommendations. The supervisor could be put in a MSSC team leader position; this may be one way to acknowledge nurses' desire for a dedicated team leader as a facilitator to practice, which could increase their intention to practice MSSC in the OR. This supervisor/team leader as could be a bedside nurse who shows leadership qualities.

The perception of an additional staff member may help make the practice of MSSC in the OR seem easier. This may be done through having an "on call/resource nurse" who is already on staff and is free on the unit to come to the OR for 15 minutes after delivery to help with MSSC maintenance. Additional investigation should be done to understand the feasibility and safety of practicing MSSC in the OR with different hospital staffing practices. It is also important to note that additional staffing may not be feasible on every unit, and may not necessarily be essential for the practice of MSSC in the OR. Furthermore, the results from this study suggest that there are nurses' who are practicing the behavior even if they do or do not have appropriate staffing; therefore not having an additional staff member on board may not be a barrier to practice for some nurses potentially due to their high attitude, SN and PBC about the practice.

Nurses were uncertain if the location of equipment in the OR (e.g. OR table, general anesthetic machine, baby blankets, baby warmer etc.) would make it difficult to perform the behavior. Nurses' slightly agreed a potential barrier to practice is positioning of equipment such as the blood pressure cuff, oxygen saturation probe, electrocardiogram leads, and

intravenous lines, although the more experience they had with MSSC in the past and the more intent they were to practice MSSC in the OR the less they perceive any of these barriers as difficult. This might be because with experience nurses may develop routines to make the practice easier for them to apply MSSC in the OR, therefore these barrier in turn would have less of a negative impact on their practice, making the practice seem easier, which would affect nurses' PBC.

Nurses in the current study also identified specific issues that are occurring at their hospital which included: not having enough space to place baby in MSSC on mother's chest; having a difficult time positioning babies when in MSSC (e.g. baby falling towards mother's neck); and bumping into the surgeon or assistant when trying to initiate MSSC in the OR. These specific barriers could be interesting to investigate further in future studies, although education should be provided to help solve these nurses' actual or perceived barriers to practice.

Phillips (2013) suggested effective ways to manage some of these environmental and practical issues about MSSC initiation. Phillips (2013) reported that before MSSC initiation the nurse should: obtain patient consent for MSSC in the OR, release the mothers arms from the arm board; be aware of where the intravenous lines and poles are; educate the patient to straighten out her arm when the blood pressure cuff is inflating; make sure warm blankets and towels are available for baby to keep baby warm; and, place baby in a transverse position on mothers chest with baby's head on one breast and the abdomen on the other breast then cover the baby with the warm blankets/towels. Placement of electrocardiogram leads off to the side (e.g., on moms shoulders) (Brady et al., 2014) or high on the mother's chest (Burke-Aaronson, 2015) might reduce interference with maternal monitoring. Magee et al. (2014)

also suggested the adjustment of IV poles and arm boards to create more space for the newborn when in MSSC in the OR. Overall, there are potential equipment barriers to practice, but there are also ways to manage these barriers if they arise, suggesting there are ways for nurses to take back control of initiating MSSC in the OR making the practice easier.

Nurses who practiced MSSC in the OR in the past believed delaying newborn assessment including medication administration, weighing and measuring if the newborn is stable, was a facilitator to practice. Nurses also believed the more they thought that delaying these interventions would facilitate the practice the more they would intend to perform the behavior of MSSC in the OR. Literature also supports the notion of delaying medications to enhance parent and infant interaction (Phillips, 2013). The Academy of Breastfeeding Medicine Protocol Committee (2008) also suggests that initial assessment can be done when baby is with the mother, therefore enhancing earlier attachment and not necessarily delaying initial assessment of the newborn.

Nurses reported that developing a policy and procedure would be another way to help minimize barriers to MSSC practices. More than half of nurses believed their hospitals do not have a policy and procedure about MSSC in the OR. One out of the four hospitals had a policy and procedure for MSSC in the OR, according to the unit managers. However, more nurses believed their hospital had a policy compared to the number of potential participants who actually had a policy. Therefore, some nurses seemed to believe there was a policy even when it didn't exist. This suggests the need for further clarification of the existence of policies and procedures on the units. Nurses who have practiced the behavior in the past believed policies and procedures influence them to initiate MSSC in the OR. This may suggest that policies and procedures influence the actual practice of MSSC in the OR,

although the study did not find a statistically significant influence on nurses' intention to practice. Nurses who were aware of the policies and procedures in their hospital indicated that they are somewhat clear and understandable, and that they have helped them determine when to perform MSSC in the OR.

Guidelines could make the practice of MSSC in the OR easier by providing evidence based triggers of when and how to initiate MSSC in the OR, in turn influencing nurses' PBC. Earlier on in this document it was reported that nurses were unaware of whose responsibility it is to initiate MSSC in the OR, causing a barrier to practice. Policies and procedures could help clarify these issues making the practice easier to initiate by providing clear role designation. The supervisor/team leader could create an appropriate flow chart that includes the steps to MSSC initiation the OR that is unit specific and flexible, which could be a part of the policy and procedure (Hung & Berg, 2011). According to past literature nurses believed protocols should be flexible in order to not restrict the practice of MSSC (Ludington-Hoe et al., 1994 as cited in Chia et al., 2006). Other authors also indicate the importance of clear and concise guidelines for MSSC initiation and explained the benefits of providing a guideline for initiation of MSSC (Engler et al., 2012; Nolan & Lawrence, 2009), and BFI practices (Semenic et al., 2012). Stevens et al. (2014) also provided a recommendation to develop a protocol, which should be created with the help of the entire interdisciplinary team to help implement the practice of MSSC in the OR.

The policy can be an extension of the breastfeeding policy that some hospitals currently have available, or may be entirely separate depending on the wants and needs of the organization. The BFIO (2014) has resources available to help establish policies and procedures. Therefore, this study suggests that there is a need to develop clear, evidence-

based, user-friendly policy and procedures for MSSC in the OR in hospitals that do not have one. Wallin et al. (2005) suggests that guidelines also help to increase knowledge and create attitudinal change. This is important to note, since attitude was the most significant predictor of nurses' intention to practice MSSC in the OR.

Therefore there are many recommendations provided in order to shift nurses' PBC about the practice in order to influence their intention to practice MSSC in the OR. These include: providing nurses with education regarding the technique and suggestions of ways to overcome perceived barriers, providing nurses with supervisors that are in a team leader and also in an evaluative role, encouraging experience with the practice, collecting data about the frequency of barriers to practice, increasing perception of additional staffing, encouraging facilitators that help make the practice of MSSC seem easier, and creating and developing a policy and procedure for the practice. These recommendations may all help increase nurses' perception of the practice as easier and in their control.

Strengths and Limitations

The current study has strengths and limitations that need to be acknowledged. These strengths and limitations will be discussed under the topics of: sample size and sampling, instrumentation, data collection and data analysis.

Sample Size and Sampling

The sample size obtained for this study was 68 from a total of 185 potential nurses; this is a response rate of 37%, consistent with other nursing studies (Accreditation Canada, 2012; Chia et al., 2006; Chizawsky, Estabrooks, & Sales, 2011). The typical response rate for hospital surveys is often less than 60% (Cook, Dickson & Eccles, 2009 as cited by VanGeest & Johnson, 2011). A recent hospital accreditation survey attained a response rate of 40%

(Accreditation Canada, 2012). The response rate in two descriptive survey studies on kangaroo care by Chia et al. (2006), and Engler et al. (2002) ranged from 37% to 59%. Therefore, although this response rate is typical, this study needs to be generalized with caution since only one third of potential participants participated in the study. It is important to note that this sample may have been biased since potentially nurses who had a more positive attitude towards the practice of MSSC in the OR participated in the study.

Managers from all four units emailed potential nurses on their work email regarding the details of the study and how to participate in the survey. A potential limitation to this method, which could have lead to a decreased response rate, was the fact that some nurses may have not received the email from their managers if they infrequently check their work email account, or if they have a full inbox. Some nurses also may have not known how to retrieve their work email account from home making it less convenient, which could have had an effect on the response rate. However, nurses were provided with the option to send the survey link to their most preferred email address in order to access the information from home.

This cross-sectional descriptive survey design was economical, flexible, and easily accessible to nurses, which was a strength of this study. A lot of information was obtained regarding facilitators and barriers to MSSC in the OR that has never been explored quantitatively to date.

Previous research examining the attitudes of NICU nurses' practice about MSSC with preterm newborns had similar population demographics in comparison to this study. Chia et al. (2006) had a sample where all participants were female, which was the same demographic found in the current study. The mean obstetric employment experience of the participants

sampled for this study was 10.23 years. Chia et al. (2006) had more participants who had their diploma (61.8%). This suggests a more highly educated sample for the current research study (54% of participants had their Bachelor Degree; 44% had their Diploma: and, 2% had their Masters).

Participants involved in this study ranged appropriately in age and years of experience for labour and delivery nurses, lived in three different geographic areas (rural, suburban, urban), had a different population demographic of patients, and dealt with a different amount of deliveries in a year, which leads to an overall different workload at each hospital. These features suggest that this research can be somewhat applicable to all labour and delivery Registered Nurses in Ontario and possibly across Canada.

The urban hospitals are also working towards their BFI Accreditation, which could have resulted in more socially desirable results from these hospitals due to the difference in organizational cultures, suggesting potential of a nested design in each hospital domain. Potentially each hospital has its unique culture different from the rest, making responses nested (Montgomery, 2009 as cited in Khater, n.d.). However, the range of responses obtained from participants suggest that participants felt comfortable providing their opinions about MSSC in the OR practices.

A limitation to this study is that participants had the ability to complete the survey at any time while at work or with colleagues making it possible for them to see or discuss their responses with other participants. This may have biased the results by having some participants complete the survey together, which could have elicited some similar responses, or also could have had participants respond in a different way compared to if they were to complete the survey on their own (Polit & Tatano Beck, 2012). However, a strength to this

method was that it gave participants an opportunity to do the survey without pressure and at their own convenience.

Instrumentation

The study's survey was not piloted before distribution in order to maintain this study's sample size. Instead of piloting the survey, eight experts were emailed different versions of the survey. This provided the survey with face and content validity by allowing these experts to determine whether the content is clear and accurately represents the literature as well as the topic being studied (Wood & Ross-Kerr, 2011).

A limitation to this instrument is that intention may not be consistently measured if in the future this survey will be redistributed. This is due to participants' intention being able to change over time depending on personal experiences and resources (Ajzen, 1991). Therefore, if intention was measured with this same group of nurses it may not obtain a consistent result due to extraneous factors that may change participants' future intention to practice MSSC in the OR.

The Cronbach's alpha calculation for each construct showed evidence of good internal consistency. After obtaining feedback from participants and examining the results from this study, some questions could be deleted in order to shorten the survey to increase response rates.

Data Collection

The data collected for this study was from self-reported measures, which could have biased the results due to participants' emotions or misinterpretation of the questions during the time of data collection, along with a variety of other affecting factors (Polit & Tatano Beck, 2012). A question that elicited a high amount of missed responses asked "The earliest

that MSSC can be initiated in the OR in my opinion is ___ (minutes) after delivery". The majority of missed responses were seen via the paper surveys. The location of this question being at the top of the paper survey in a separate table may have increased the non-response rate. This suggests that the paper survey format had some limitations to obtaining data, since no patterns of 'missingness' of this nature were noted on the responses from the electronic surveys. Furthermore, one participant suggested via email that some of the data obtained from their rural hospital may have been skewed. This participant suggested their hospital does not have the ability to transfer a patient to the ICU, making this question difficult to answer due to inapplicability. Therefore, since this question did not have a 'not applicable' option these participants may have been forced to provide a response. Therefore, participants may have not interpreted this question the same way, and they could have responded to them based on what they could do.

Some of the questions asked participants to recall their behaviors that occurred in the last two months. This may not have been a long enough recall period for participants, since they may have not been in the OR within that two-month time period. Alternatively, this two-month recall may have also been too long for some participants to remember when they had taken care of healthy term elective cesarean sections, suggesting potential for recall bias. More accurate information could also be obtained through chart audits or observation to understand participants' actual behaviors of MSSC initiation in the OR.

The overall results obtained from this study may not be only generalizable for healthy term scheduled elective cesareans, since participants may have had difficulty differentiating between healthy term scheduled elective cesarean sections and emergency cesarean sections, which also could have an effect on the accuracy of the results obtained.

The data collected from these participants may also not be independent of each other since there was no way to determine with confidence that the Registered Nurses were not lactation consultants or in training.

Data Analysis

This research is part of a new research domain, which should be interpreted with caution. This study was also a cross-sectional design making it difficult to determine direction of causality (Field, 2009).

Assumptions for running a multiple linear regressions were done prior to data analysis. One assumption suggesting independence of observations was met, but it is important to note that participants had unlimited access to the survey and were not restricted on the amount of times they could potentially complete the survey. Participant's names and IP addresses were also not tracked in order to maintain participant confidentiality. Participants were able to complete the survey at any time and at any location. Therefore, participants who may have completed their survey before other participants could have potentially influenced their responses by discussing their answers with other participants who have not yet completed the survey. Participants' responses seemed different upon examination of the data, but there is no way to be certain that each value of the outcome variable is a different case. In addition individual hospital cultures could have been similar as mentioned previously, therefore suggesting the potential of a nested design (Polit & Tatano Beck, 2012), which could have also controlled for the possible dependence of observations.

Five SN questions also revealed a high amount of missing data. These questions asked how much they believe the following health care team members approve or disapprove of MSSC in the OR practices: administration, obstetrician, pediatricians, lactation

consultants, and special care nursery nursing colleagues. These questions may have been missed since, according to the feedback provided on the paper surveys and email communication with unit managers, some hospitals do not have lactation consultants, special care nursery nurses, and pediatricians present at every healthy term scheduled elective cesarean section. Therefore, this limits the data obtained from these questions. Participants provided feedback written directly on their paper survey suggesting they do not know who their administrator (e.g. program director) is, which makes them unable to also respond to this question. Participants may have also not responded to these SN questions since they may not know everyone's opinion about MSSC in the OR due to this being a relatively new practice in itself. The participants may also have not wanted to respond to this question due to potential confidentiality concerns.

The question in the survey asking participants "Approximately how long does it take you to initiate MSSC after scheduled elective cesarean delivery?" was not applicable to 38% of participants. This suggests 38% of participants have not initiated MSSC in the OR. This response is different from participants' past behavior suggesting 55% of participants have not practiced MSSC in the OR in the last two months. This may indicate that some participants provided their opinion about how long it "would" take them to initiate MSSC in the OR even though they have not practiced MSSC in the OR. The time frame for memory recall may have been too short to accurately evaluate participants' past behavior, allowing participants to provide a better overall response to the duration of time it takes them to initiate MSSC in the OR since no time frame was specified.

A significant small positive relationship existed between past behavior and the item stating that a patient requiring a blood transfusion makes it difficult to apply MSSC in the

OR, suggesting the more difficult nurses' perceive this barrier they more they have practiced MSSC in the OR in the past. A small significant positive relationship existed between the item stating a patient being required to be transferred to the ICU or another hospital makes it difficult to apply MSSC in the OR and intention, suggesting the more difficult they perceived this barrier the more they have intended to practice MSSC in the OR. Nurses reported that they agree to strongly agree that these issues are barriers to practice making them strong barriers to practice. These results were left unexplained but they may suggest that nurses' will practice the behavior if any of the following barriers occur, although these barriers are considered typically difficult to overcome. This was rare enough result to elicit a small significant result.

Finally, the two open-ended questions at the end of the survey allowed this researcher to understand the most important facilitators and barriers to practice. These open-ended questions allowed participants to include any information they felt may have been missing from the survey and was important to them, which was a strength to this study. However, these open-ended questions may have limited other options of facilitators and barriers to practice, since they were asked at the end of the survey. After completing the survey, participants may have identified a theme to be important to them from the previous questions, which could have influenced some of the thematic content analysis results.

Knowledge Dissemination

The current research study has found evidence regarding the facilitators and barriers to MSSC in the OR. Knowledge gained from this research study will be shared to help other units with their beginning, middle and end stages of implementing/improving MSSC in the OR practices. Some of the recommendations to practice mentioned previously similarly align

with the BFIO (2014) strategy. This BFIO strategy provides many different ways that organizations have tried to disseminate knowledge regarding the benefits of BFI practices, similar ideas were discussed in this document.

KTA suggests having appropriate stakeholders involved in the process of helping implement MSSC in the OR (Graham et al., 2006). In order to improve the practice of MSSC in the OR we need to get interested stakeholders involved in the process by educating them and providing them with evidence on the benefits to MSSC in the OR. The following individuals who would gain from customized knowledge of MSSC in the OR include: administration (e.g. Program Director); manager; obstetrician; anesthesiologist; pediatricians; lactation consultants; labour and delivery nursing colleagues; special care nursery nursing colleagues; patients; and, patients support person. Other participants mentioned in this study that might benefit from this knowledge may include: surgical assistants and respiratory therapists. One stakeholder that was not mentioned in the study may be midwives, and future studies should measure how supportive they are in the practice of MSSC in the OR, since the literature has mentioned their extensive involvement in initiating MSSC in the OR (Smith et al., 2008). Once all stakeholders are identified meetings should be held to develop a plan on how to successfully implement or improve the practice.

The results from this study have been measured through nurses' perceptions of barriers and facilitators to practice; therefore this information is mainly tailored towards nurses. However, in order to get everyone on board with the practice knowledge should be shared with all individuals involved in the practice, and further knowledge should be obtained regarding other health care professionals, patients and patients support persons'

perceptions of barriers to practice, and recommendations to shift nurses' attitude, SN and PBC could be used to further help with the initiation/improvement of the practice.

There are a few principles of adult learning that may help disseminate the knowledge obtained from this study. These principles include: "adults must want to learn; adults will learn what they feel they need to learn; adults learn by doing, make it relevant; adults learning focuses on problems; adults are affected by prior experience; adults learn best in an informal situation; and, adults want guidance and information" (BFIO, 2014, p. 56). Therefore, keeping these principles in mind, the results obtained from this study will be disseminated in the future through the use of: poster and oral presentations shared at medical/nursing conferences, webinars, in-services presented to health care team members, and online interactive educational presentations keeping the adult learning principles in mind.

Conclusion

This study helped to determine barriers that are causing discrepancies in nursing practice and determined missing information that helped fill the gap between evidence and practice, although some gaps still remain as mentioned throughout this document. Further qualitative methods may be needed to gain an in depth understanding of nurses' behavior, intentions, barriers and facilitators to practice. According to these participants' opinions about MSSC in the OR, there was a positive attitude towards the practice and they believed they are supported by most of the health care team members, but they were uncertain if the practice of MSSC in the OR is in their control. This study also revealed that focusing on shifting nurses' attitude about the practice is critical since this was the most important predictor of intention. Conversely, we also need to continue to provide nurses' with the support they need to practice MSSC in the OR and provide them with knowledge and

educational opportunities to assist them to feel in control of MSSC initiation by overcoming barriers to practice while keeping in mind the newborns and mothers safety. Therefore, in order to see improvement in MSSC practices this knowledge should be shared as soon as possible to help with MSSC in the OR practices across Ontario.

References

Academy of Breastfeeding Medicine Protocol Committee [ABMPC] (2008) ABM protocols: ABM clinical protocol #5: peripartum breastfeeding management for healthy mother and infant at term revision, June 2008. *Breastfeeding Medicine, 3*, 129–132.

Academy of Breastfeeding Medicine Protocol Committee [ABMPC] (2010) ABM clinical protocol#7: model breastfeeding policy revision (2010). *Breastfeeding Medicine, 5*, 173–177.

Accreditation Canada (2012) Accreditation report Niagara Health System St. Catharines, ON. Retrieved from www.niagarahealth.on.ca/file/download/Xw1EOMQJY3Iubzlh9KTmCQ.

Aday, L.A., & Cornelius, L.J. (2006) *Designing and conducting health surveys: A comprehensive guide*. San Francisco, CA: Joessy-Bass. Downloadable at http://www.amazon.com/Designing-Conducting-Health-Surveys-Comprehensive/dp/0787975605

Ajzen, I. (n.d.-a) *Theory of planned behavior*. Retrieved from http://people.umass.edu/aizen/tpb.diag.html#null-link

Ajzen, I. (n.d.-b) *Constructing a theory of planned behavior questionnaire*. Retrieved from http://people.umass.edu/aizen/pdf/tpb.measurement.pdff

Ajzen, I. (1991) Theory of planned behavior. *Organizational Behavior and Human Decision Process*, *50*, 179–211.

Ajzen, I. (2011) The theory of planned behavior: reactions and reflections. *Psychology and Health, 26*, 1113–1127.

American College of Obstetrics and Gynecology [ACOG] (2015) Obstetric care consensus. Retrieved from http://www.acog.org/Resources-And-Publications/Obstetric-Care-Consensus-Series/Levels-of-Maternal-Care

Armitage, C.G. & Reidy, J.G. (2008) *Use of mental simulators to change theory of planned behavior variables*. Retrieved from http://shura.shu.ac.uk/5075/3/Reidy_Mental_Simulations_%26_State_Anxeity_Manuscript.pdf

Austin, D. (2013) *Improving breastfeeding success with skin to skin contact*. Retrieved from http://scienceofcaring.ucsf.edu/alumni-focus/improving-breastfeeding-success-skin-skin-contact

Bayes, S., Fenwick, J., & Hauck, Y. (2012) 'Off everyone's radar': Australian women's experience of medically necessary elective cesarean section. *Midwifery, 28*, e900–e909.

Bergman, N.J., Linley, L.L., & Fawcus, S.R. (2004) Randomized controlled trial of skin-to-skin contact from birth versus conventional incubator for physiological stabilization in 1200- to 2199-gram newborns. *Acta Paediatr, 93*, 779–785.

Bigelow, A., Power, M., MacLellan-Peters, J., Alex, M. & McDonald, C. (2012) Effect of mother/infant skin-to-skin contact on postpartum depressive symptoms and maternal physiological stress. *JOGNN, 41*, 369–380.

Brady, K., Bulpitt, D., & Chiarelli, C. (2014) An interprofessional quality improvement project to implement maternal/infant skin-to-skin contact during cesarean delivery. *Journal of Obstetrics and Neonatal Nursing*, 43, 488-496.

Brady, K.M., Bulpitt, D., Chiarelli, C., & Shepard, L. (2013) Skin-to-skin in the

operating room–it takes a village. *JOGNN, 42*, S42.

Bramson, L. Lee, J.W., Moore, E., Montgomery, S, Neish, C, Bahjri, K., & Lopez Melcher, C. (2010) Effect of early skin to skin mother infant contact during the first 3 hours following birth on exclusive breastfeeding during the maternity hospital stay. *Journal of Human Lact*ation, 26, 130–137.

Breastfeeding Committee for Canada [BCC] (2009) *BFI integrated ten steps practice outcome indicators for hospitals and community health services*. Retrieved from http://www.breastfeedingcanada.ca/documents/2012-05-14_BCC_BFI_Ten_Steps_Integrated_Indicators.pdf

Brimdyr, K. Svensson, K., & Windstrom, R.M. (2010) *Skin to skin in the first hour: practical advice for staff after vaginal and cesarean birth* [Motion picture]. Healthy Children's Center for Breastfeeding.

Burke-Aaronson, A.C. (2015) Skin-to-skin care and breastfeeding in the perioperative suite. *Maternal Child Nursing*, 40, 105–109.

Burns, K.E.A., Duffett, M., Kho, M.E., Meade, M.O., Adhikari, N.K.J., Sinuff, T., & Cook., D.J.C. (2008) A guide for the design and conduct of self-administered surveys of clinicians. *Canadian Medical Association Journal, 179*, 245–251.

Byaruhanga, R.N., Bergstrom, A., Tibemanya, J., Nakitto, C. & Okong, P. (2008) Perceptions among post delivery mothers of skin-to-skin contact and newborn baby care in periurban hospital in Uganda. *Midwifery, 24*, 183 – 189.

Bystrova, K., Ivanova, V., Edhborg, M., Matthiesen, A-S., Ransjo-Arvidson, A-B, Mukhamedrakhimov, R., Uvnas-Moberg, K., & Widstrom A-M. (2009) Early contact versus separation: effects on mother-infant interaction one year later. *Birth, 36*, 97–

109.

Bystrova, K., Widstrom, A-M, Mathiesen, A-S, Ransjo-Arvidson, A-B, Welles-Nystrom, B., Wassberg, C., Vorontsov I., & Uvnas-Moberg, K. (2003) Skin-to-skin contact may reduce negative consequences of "the stress of being born": a study on temperature in newborn infants, subjected to different ward routines in St. Petersburg. *Acta Paediatr, 92*, 320–326.

Canadian Institute for Health Information [CIHI] (2004) *Giving birth in Canada providers of maternity and infant care*. Retrieved from https://secure.cihi.ca/free_products/GBC2004_report_ENG.pdf

Canadian Institute for Health Information [CIHI] (2013) *Quick stats*. Retrieved from http://www.cihi.ca/CIHI-extportal/internet/en/quick_stats/quick+stats/quick_stats_main?pageNumber=1&resultCount=10

Carefoot, S., Williamson, P., & Dickson, R. (2005) A randomized controlled trial in north of England examining the effects of skin-to-skin care on breastfeeding. *Midwifery, 21*, 71– 79.

Chalmers, B., Kaczorowski, J., Darling, E., Heaman, M., Fell, D.B., O'Brien, B., & Lee, L. (2010) Cesarean and vaginal birth in Canadian women: a comparison of experiences. *Birth, 37*, 44–49.

Chalmers, B., Levitt, C., Heaman, M., O'Brien, B., Sauve, R., & Kaczorowski, J. (2009) Breastfeeding rates and hospital breastfeeding practices in Canada: A national survey of women. *Birth*, *36*, 122–132.

Chia, P., Sellick, K., & Gan, S. (2006) The attitudes and practice of neonatal nurses in the use of kangaroo care. *Australian Journal of Advanced Nursing, 23*, 20–27.

Chizawsky, L.L.K, Estabrooks, C.A., & Sales, A.E. (2011) The feasibility of web-based surveys as a data collection tool: a process evaluation. *Applied Nursing Research*, 24, 37 – 44.

Christensson, K., Cabrera, T., Christensson, E., Unvas-Moberg, K., & Winberg, J. (1995) Separation distress call in the humans neonate in the absence of maternal body contact. *Acta Paediatr*, 84, 468–473.

Crenshaw, J. (2007) Care practice #6: no separation of mother and baby, with unlimited opportunities for breastfeeding. *Journal of Perinatal Education*, 16, 39–43.

Crenshaw, J., Cadwell, K., Brimdyr, K., Widstrom, A., Svensson, K., Champion, J., Jane, D., & Glider, R.E. (2012) Use of video-ethnographic intervention (PRECESS Immersion Method) to improve skin-to-skin care and breastfeeding rates. *Breastfeeding Medicine*, 7, 69 – 78.

Creswell, J.W., & Clark, V.L.P. (2011) *Designing and conducting mixed method research: second edition*. Thousand Oaks, CA: Sage Publications. Downloadable at http://www.amazon.ca/Designing-Conducting-Mixed-Methods-Research/dp/1412975174

Dabrowski, G.A. (2007) Skin to skin contact giving birth back to mothers and babies. *Association of Women's Health Obstetrics and Neonatal Nurses*, 11, 66–71.

Dekker, R.L. (2012) *The evidence for skin-to-skin care after a cesarean*. Retrieved from http://evidencebasedbirth.com/the-evidence-for-skin-to-skin-care-after-a-cesarean/

Dilman, D.A., Smyth, J.D., & Christian L.M. (2009*) Internet, mail and mixed mode surveys the tailored design method* (3rd ed.) New Jersey, NY: John Wiley & Sons Inc.

Dodd, V. (2005) Implications of kangaroo care for growth and development in preterm

infants. *JOGNN, 34*, 218–228.

Engler, A.J, Cusson, R.M., Bahnsen, M., Coates, P., McHargue, L., & Settle, M. (2002) Kangaroo care national survey of practice, knowledge, barriers, and perceptions. *MCN the American Journal of Maternal Child Nursing, 17*, 146–153.

Erlandsson, K. Dsilna, A., Fagerber, I., & Christensson, K. (2007) Skin to skin care with father after cesarean birth and its effect on newborn crying and prefeeding behaviors. *Birth*, *34*, 105 – 114.

Fagestrom, A. (n.d.) *The behavioral perspective model: A proposed theoretical framework to understand and predict online consumer behavior*. Retrieved from http://www.iseing.org/emcis/EMCIS2005/pdfs/8.pdf

Ferber, S.G. & Makhoul, I.R. (2004) The effect of skin-to-skin contact (kangaroo care) shortly after birth on neurobehavioral responses of the term newborn: a randomized, controlled trial. *Peadiatrics, 113*, 858–865.

Field, A. (2009) *Discovering statistics using SPSS (3rd ed.)*. Chennai, India: Sage

Fishbein, M., & Ajzen, I. (2010) *Predicting and changing behavior the reasoned action ' approach*. New York, New York: Psychology Press.

Fitzpatrick, J., & Montgomery, K.S. (2004) *Internet for nursing research: a guide to strategies, skills and resources*. New York, NY, United States of America: Springer Publishing Company.

Fluid Survey (n.d.) *The world's best online survey software*. Retrieved from http://fluidsurveys.com/

Fortin, N.C. (2012) Exploring new frontiers: providing skin to skin contact for mothers and newborns during cesarean birth, *JOGNN, 41,* S150.

Fox-Wasylyshyn, S.M., & El-Masr, M.M. (2005) Focus on research methods: handling missing data in self-report measures. *Research in Nursing & Health, 28*, 485–495.

Glanz, K., Rimer, B.K., & Lewis, F.M. (2002) *Health behavior and health education: theory research and practice (3rd ed.)*. San Francisoco, California: John Wiley & Sons.

Gouchon, S., Gregori, D., Picotto, A., Patrucco, G., Nangeroni, M., & Giulio, P.D. (2010) Skin to skin contact after cesarean delivery: an experimental study. *Nursing Research,* 59, 78–83.

Government of Canada (2013) *Tricouncil policy statement 2 tutorial*. Retrieved from http://www.pre.ethics.gc.ca/eng/index/

Graham, I.D, Logan, J., Harrison, M.B., Straus, S.E., Tetroe, J., Caswell, W., & Robinson, N. (2006) Lost in knowledge translation: time for a map? *The Journal of Continuing Education in Health Professions, 26*, 13–24.

Grant, M.J, & Booth, A. (2009) A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, 26, 91 – 108.

Hampton, C., & Vilela, M. (2013) *Conducting surveys*. Retrieved from http://ctb.ku.edu/en/tablecontents/sub_section_main_1048.aspx

Hoddinot, S.N., & Bass, M.J. (1986) The Dilman total design survey method: a sure fire way to get high survey return rates. *Canadian Family Physician, 32*, 2366 – 2368.

Hofer, M. (2006) Psychobiological root of early attachment. *Association of Psychological Science, 15*, 84–88.

Hung, K.J., & Berg, O. (2011) Early skin to skin after cesarean to improve breastfeeding. *Maternal Child Nursing*, *36*, 318–324.

Keller, A., & Brenneman, A. (2012) Operation kangaroo care. *JOGNN, 41*, S37.

Khater, S. (n.d.) *Design of experiments nested designs split plot designs* [PowerPoint slides].Retrieved from https://www.datacenter.aucegypt.edu/gaafar/ENGR&20592/Safa.ppt

Kuguoglu, S., Yildiz, H., Tanir, M.K., & Demirbag, B.C. (2012) Cesarean Delivery. In R. Salim (Ed.), *Breastfeeding after a cesarean delivery*, 121–160. Retrieved from http://cdn.intechopen.com/pdfs/37218/InTech-Breastfeeding_after_a_cesarean_delivery.pdf

Leeu, E.D., Hox, J., & Huiusman, M. (2003) Prevention and treatment of item non-response. *Journal of Official Statistics, 19*, 153-176.

Ludington-Hoe, S.M., Morgan, K., & Abouelfettoh, A. (2008) A clinical guideline for implementation of kangaroo care with preterm infants of 30 or more weeks' postmenstrual age. *Advances in Neonatal Care, 8*, S3–S23.

Ludington-Hoe, S., & Swinth, J. (1996) Developmental aspects of kangaroo care. *JOGNN, 25*, 691–701.

Magee, S. Battle, C., Morton, J., & Nothnagle, M. (2014). Promotion of family-centered birth with gentle cesarean delivery. *Journal of the American Board of Family Medicine*, 27.

Mayring, P. (2000) Qualitative content analysis. Retrieved from http://www.utsc.utoronto.ca/~kmacd/IDSC10/Reading/Readings/text%20analysis/CA.pdf

McGill University Health Centre (2013) *Skin-to-skin care now in place at MUHC*. Retrieved from http://muhc.ca/newsroom/article/skin-skin-care-now-place-muhc-0

McKeever, J., & St. Fleur, R. (2012) Overcoming barriers to baby-friendly status: one hospitals experience. *Journal of Human Lactation, 28*, 312–314.

Mikiel-Kostyra, K, Mazur, J., & Boltruszko, I. (2002) Effect of early skin-to-skin contact after delivery on duration of breastfeeding; a prospective cohort study. *Acta Paediatr, 91*, 1301-1306.

Moore, E.R., & Anderson, G.C. (2007) Randomized controlled trial of very early mother -infant skin-to-skin contact and breastfeeding status. Journal of Midwifery & Women's Health, 52, 116 - 124.

Moore, E.R., Anderson, G.C., & Bergman, N. (2007) Early skin-to-skin contact for mothers and their healthy newborn infants (review). *Cochrane Database of Systematic Review, 1*, 1–75.

Moore, E.R., Anderson, G.C., Bergman, N., & Dowswell, T. (2012) Early skin to skin contact for mothers and their health newborn infants (review). *Cochrane Database Systematic Review, 5*, 1–104.

Montgomery, A., Hale, T.W., & The Academy of Breastfeeding Medicine Protocol Committee [ABMPC] (2006) ABM clinical protocol #15: analgesia anesthesia for the breastfeeding mother. *Breastfeeding Medicine, 1*, 271 –277.

National Institute for Health and Clinical Excellence [NICE]. (2007). *How to change practice: Understanding, identify and overcome barriers to change*. London: Author. (Downloadable at: https://www.nice.org.uk/Media/Default/About/what-we-do/Into-practice/Support-for-service-improvement-and-audit/How-to-change-practice-barriers-to-change.pdf)

Nolan, A., & Lawrence, C. (2009) A pilot study of a nursing intervention protocol to

minimize maternal-infant separation after cesarean birth. *JOGNN, 38*, 430–442.

Phillips, R. (2013) The sacred hour: uninterrupted skin-to-skin contact immediately after birth. *Newborn & Infant Nursing Reviews*, 13, 67 – 72.

Polit, D.F., & Tatano Beck, C.T. (2012) *Nursing research generating and assessing evidence for nursing practice* (9th ed.). Philadelphia, PA: Wolters Kluwer Health, Lippincott Williams & Wilkins.

Pound C.M., & Unger, S.L. (2012) The baby-friendly initiative: protecting, promoting and supporting breastfeeding. *Paediatr Child Health, 17*, 317–321.

Provincial Council for Maternal Child Health (PCMCH) (2012) *Mother baby dyad care implementation toolkit*. Retrieved from http://www.pcmch.on.ca/LinkClick.aspx?fileticket=IN9Cl8Of_A8%3d&tabid=107

Registered Nurses Association of Ontario [RNAO] (2003) *Breastfeeding best practice guidelines for nurses*. (6th ed.). Toronto, ON: Author. (Downloadable at: http://rnao.ca/sites/rnao-ca/files/Breastfeeding_Best_Practice_Guidelines_for_Nurses.pdf)

Registered Nurses Association of Ontario [RNAO] (2012) *Toolkit implementations of best practice guidelines*. (2nd ed.). Toronto, ON; Author. (Downloadable at: http://rnao.ca/sites/rnao-ca/files/RNAO_ToolKit_2012_rev4_FA.pdf)

Righard, L., & Alade, M.O (1990) Effect of delivery room routines on success of first breast-feed. *Lancet, 336*, 1105–1107.

Rowe-Murray, H.G., & Fisher, J.R.W. (2001) Operative intervention in delivery is associated with compromised early mother infant interaction. *British Journal of Obstetrics and Gynecology*, 108, 1068-1075.

Rowe-Murray, H.J., & Fisher, J.R.W. (2002) Baby friendly hospital practices: Cesarean section is a persistent barrier to early initiation of breastfeeding. *BIRTH*, *29*, 124–131.

Royal College of Nursing (2015) *Professional attitudes and behaviors*. Retrieved from https://www.rcn.org.uk/development/practice/professional_attitudes_and_behaviours

Semenic, S., Childerhose, J.E., Lauziere, J., & Groleau, D. (2012) Barriers, facilitators and recommendations related to implementing the baby-friendly imitative (BFI): an integrative review. *Journal of Human Lactation, XX*, 1 – 18.

Sioux Lookout Meno Ya Win Health Centre (2013) *Mother-baby dyad care at SLMHC – the health of the infant and the health of the mother are at the center of it!* Retrieved from http://www.slmhc.on.ca/news/content/articles/article/mother-baby-dyad-care-at-slmhc

Smith, P.B., Moore, K., & Peters, L. (2012) Implementing baby-friendly practices: strategies for success. *Maternal Child Nursing,* 37, 228–223.

Smith, J., Plaat, F., & Fisk, N.M. (2008) The natural caesarean: a woman-centered technique. *British Journal of Obstetrics and Gynecology*, 115, 1037–1042.

Stevens, J., Schmied, V., Burns, E., & Dahlen, H. (2014) Immediate or early skin-to-skin contact after a Cesarean section: a review of the literature. *Maternal & Child Nutrition*, 10, 456–473.

Stikes, R., & Barbier, D. (2013) Applying the plan do study act model to increase the use of kangaroo care. *Journal of Nursing Management*, *21*, 70 – 75.

Stone, S., Prater, L., & Spencer, R. (2014) Facilitating skin-to-skin contact in the operating room after cesarean birth. *Nursing for Women's Health*, 18(6), 487-499.

Straus, S., Tetroe, J., Graham, I. D., Zwarenstein, M., & Bhattacharyya, O. (2009).

Monitoring and evaluating knowledge. In: S. Straus, J. Tetroe, & I. D. Graham (Eds.). Knowledge translation in health care, 151–159. Oxford, UK: Wiley-Blackwell.

Tallandini, M.A., Huertas-Ceballos, A., & Genesoni, L. (2005*) A short history*. Retrieved from http://www.ucl.ac.uk/kangaroocare/kangaroocareashorthistory.html

Teo, T., & Lee, C.B. (2010) Examining the efficacy of the theory of planned behavior (TPB) to understand pre-service teachers' intention to use technology. *Campus Wide Information Systems*, 27, 60–67.

Trillium Health Partners (2014) *Breastfeeding your baby after a cesarean birth* [Video]. Retrieved from https://www.youtube.com/watch?v=ABaxnXG_zeU#t=254

Valizadeh, L., Ajoodaniyan, N., Namnabati, M., Zamanzadeh, V., & Layegh, V. (2013) Nurses' viewpoint about the impact of kangaroo mother care on the mother – infant attachment. *Journal of Neonatal Nursing*, 19, 38–43.

VanGeest, J., & Johnson, T.P. (2011) Surveying nurses: identifying strategies to improve participation. *Evaluation & the Health Professional, 34*, 487–511.

Velandia, M., Matthisen, A.S., Uvnas-Moberg, K., & Nissen, E. (2010) Onset of vocal interaction between parents and newborns in skin-to-skin contact immediately after elective cesarean section. *Birth, 37*, 192–201.

Velandia, M. Unvas-Moberg, K., & Nissen, E. (2011) Sex differences in newborn interaction with mother or father during skin to skin contact after cesarean section. *Acta Paediatrica*, 101, 360-367.

Wallin, L. Rudberg A., & Gunningberg, L. (2005) Staff experiences in implementing guidelines for kangaroo mother care – a qualitative study. *International Journal of Nursing Studies, 42*, 61–73.

Windstrom A-M., Lilja, G., Aaltomaa-Michalias, P., Dahllof, A., Lintula, M., & Nissen, E. (2011) Newborn behavior to locate the breast when skin-to-skin: a possible method for enabling early self regulation. *Acta Paediatrica, 100*, 79–85.

World Health Organization [WHO] (1985) Appropriate technology for birth. *Lancet, 331*, 436– 437.

World Health Organization [WHO] (1998) *Evidence for the ten steps to successful breastfeeding*. Retrieved from http://whqlibdoc.who.int/publications/2004/9241591544_eng.pdf

World Health Organization & Unicef (2009) *BFHI Section 3: breastfeeding promotion and support in a baby-friendly hospital*. Retrieved from http://www.who.int/nutrition/publications/infantfeeding/bfhi_trainingcourse_s3/en/index.html

Woods, M.J., & Ross-Ker, J.C. (2011) *Basic steps in planning nursing research: from question to proposal (7th ed.)*. United States of America: Jones and Bartlette Publishers.

Young, D. (2011) "Gentle cesareans": better in some respects, but fewer cesareans are better still. *Birth, 38*, 183–184.

Zanardo, V., Svegliado, G., Cavallin, F., Giustardi, A., Cosmi, E., Litta, P., & Trevisanuto, D. (2010) Elective cesarean delivery: does it have a negative effect on breastfeeding? *Birth, 37*, 275–279.

Zauderer, C., & Goldman, S. (2012) Cesarean mother perception of benefits associated with skin to skin contact, *JOGNN, 41*, S150.

Zwedeberg, S., Blomquist, J., & Sigerstad, E. (2015) Midwives experiences with mother

-infant skin-to-skin contact after cesarean section: ‘Fighting an uphill battle’, *Midwifery*, 31, 215 – 220.

Appendix A: Letter of Interest

Hello,
My name is Magdalena Dobosiewicz and I am a Registered Nurse on Labour and Delivery at the Niagara Health System. I am currently pursuing my Masters in Applied Health Sciences at Brock University and I am planning to conduct research on nursing perceptions about facilitators and barriers to maternal skin to skin contact practices in the operating room. This study will be using an electronic survey distributed to ALL the Registered Nurses labour and delivery units. I am currently in the initial stages and I am interested in learning if you would be willing to allow your unit to participate in this survey.

I also wanted to receive your input on the most effective method of distributing the survey to the nurses on your unit. I was hoping to send an email to the managers whose units participate in the study with a link to the survey website. I would like the managers to distribute this email to all registered nurses on their unit through their personal work email. I would also send hard copies to the unit for any nurses who would rather fill out the surveys by hand. Please let me know if this sounds like a feasible idea.

Also if you believe that your floor would be interested in participating in this survey would you be able to provide me with someone to contact about ethics approval at your hospital?

All information obtained from this research will remain confidential and this research will need to be cleared through Brock University's and individual hospitals ethic's boards before proceeding.

If interested in participating in the survey please send an email to md06hz@brocku.ca

Thank you very much in advance! Look forward to hearing from you.

Sincerely,

Magdalena Dobosiewicz
BScN, RN
Women and Babies
Niagara Health System
Brock University Masters Student

Appendix B: Email of Information Mailed to Unit Managers
(Email Sent on May 8th, 2014)

Dear [Insert Unit Manager Name Here],

I would like to begin by thanking you for allowing me to distribute this survey to the Registered Nurses on your unit. Data obtained from this study will create further understanding about barriers and facilitators to maternal skin to skin contact practices in the operating room, and contribute to nursing research, education and skin to skin contact program implementation.

This information email contains the dates for emailing the ***important study documents*** such as the invitation email containing the study's electronic survey link, study reminders and the final study feedback email to send to the Registered Nurses on your unit.

You will also be receiving an email today with an announcement that I would like you to forward to the Registered Nurses on your unit today, or as soon as possible.

All of these documents will be emailed to you on the distribution date. Please forward the emails to only the Registered Nurses on your unit on the day you receive the emails, or as soon as possible. If you are having any technical difficulties feel free to contact me or my faculty supervisor via email or phone.

Study Document	Distribution Dates (sent to Registered Nurses work email addresses)
Announcement Email	To be sent today (May 8th, 2014)
Invitation Email (containing study link)	May 22nd 2014
Study Reminders	May 27th 2014, June 3rd 2014, June 9th 2014
Feedback Email	June 13th 2014

I also wanted to inform you that I have mailed you a set of three posters to be hung on your unit in your nursing lounge, in the recovery room and in the nurses' locker room if possible. Can you please hang these posters today or as soon as possible. I will then email you once the study is complete to remind you to take down the posters.

Thank you for making this study possible and I appreciate all your help with the continuous email communication and distribution of these important documents to the Registered Nurses' work email addresses. If you have any questions or concerns please feel free to contact the me via email md06hz@brocku.ca, or phone (905-650-4547) or my faculty supervisor Dr. Lynn Rempel via email lrempel@brocku.ca, or phone (905-688-5550 x4774) anytime.

Sincerely,

Magdalena Dobosiewicz
BScN, RN
Masters Student
Faculty of Applied Health Sciences
Brock University

Dr. Lynn Rempel
RN, PhD
Associate Professor
Department of Nursing
Brock University

Appendix C: Email Announcement
(Email Sent on May 8th, 2014)

Hello [Insert Unit Name Here] Registered Nurses,

You will soon be invited to participate in an upcoming study on "Registered Nurses' Perceptions About Facilitators and Barriers to Maternal Skin to Skin Contact in the Operating Room". We would greatly appreciate your help!

This announcement is being sent on behalf of Magdalena Dobosiewicz a Masters student from Brock University and her thesis supervisor Dr. Lynn Rempel, Associate Professor from Brock University Department of Nursing. This research is being conducted as part of Magdalena Dobosiewicz's degree requirements for a Master of Arts in Applied Health Sciences.

Information about this study will be sent to your work email address. Your participation will allow you to provide constructive feedback about the practice of skin to skin contact in the operating room and increase an understanding of what nurses believe about this practice.
This survey will be available from ***May 22nd 2014 to June 12th 2014***.

We hope that you will take 15 to 20 minutes to complete an electronic or paper survey.

To thank you for your participation you will be given the option to enter your email address into a draw to win an Acer Tablet. Please keep checking your work email for further details.

If you have any questions regarding this research please contact:

Magdalena Dobosiewicz
BScN, RN
Masters Student
Faculty of Applied Health Sciences
Brock University
md06hz@brocku.ca

Dr. Lynn Rempel
RN, PhD
Associate Professor
Department of Nursing
Brock University
lrempel@brocku.ca

(Enlarged Poster Sent in Announcement Email

Appendix D: Poster
(Available on all units by or before May 15th, 2014)

Online Survey for Registered Nurses Available

May 22nd to June 12th 2014

For Further Details About the Survey

Please Check Your Work Email Account Starting May 8th 2014

FACILITATORS AND BARRIERS TO MATERNAL SKIN TO SKIN CONTACT IN THE OPERATING ROOM

This study has been reviewed and received ethical clearance through the Research Ethics Board at Brock University [File #13 – 149 - REMPEL] and Insert Specific Hospital REB File Number Here [File #]

Appendix E: Invitation Email
(Email Sent on May 22nd, 2014)

Dear [Insert Manager Name Here],
Please forward this email to all Registered Nurses on your unit today, if possible. Please delete my email information and these statements before forwarding this email.

Thank you!

- -

Invitation Email

Date: May 22nd 2014
Title of Study: Registered Nurses' Perceptions About Facilitators and Barriers to Maternal Skin to Skin Contact in the Operating Room

Principal Student Investigator: Magdalena Dobosiewicz BScN, RN
Faculty Supervisor: Lynn Rempel RN, PhD

I, Magdalena Dobosiewicz, BScN, RN the principal Masters Student research investigator from Brock University and Dr. Lynn Rempel, RN, PhD, Associate Professor of the Brock University Department of Nursing, invite you to participate in a research project.

The purpose of this research is to explore Registered Nurses' opinions about the barriers and facilitators to maternal skin to skin contact practices in the operating room with healthy term scheduled repeat and primary elective cesarean section patients. Participation will involve either completing an electronic survey by clicking on the link below or by completing the paper version of the survey available on your unit in the nursing lounge.

Please click the electronic link [http://fluidsurveys.com…] to access the survey and consent form or copy and paste the URL into your web browser.

OR

Go to your nursing lounge and access the paper survey that is located beside the locked box labeled "Registered Nurses' Opinions About Maternal Skin to Skin Contact in the Operating Room Study Lock Box". Once your paper survey is complete please submit it into this labeled locked box.

This survey will take approximately 15 to 20 minutes to complete.

If you have any pertinent questions about your rights as a research participant, please contact the Brock University Research Ethics Officer (905-688-5550 ext 3035, reb@brocku.ca) or your hospital board of ethics (see below):

(Contact information was individualized to specific hospital):
Insert Contact Information Here

If you have any questions, please feel free to contact the principal student investigator or faculty supervisor.

Thank you,

Magdalena Dobosiewicz
BScN, RN
Masters Student
Faculty of Applied Health Sciences
Brock University
905-650-4547, md06hz@brocku.ca

Lynn Rempel
RN, PhD
Associate Professor
Department of Nursing
Brock University
905-688-5550 x 4774, lrempel@brocku.ca

The study has been reviewed and received ethics clearance through **(Only list Brock University and specific hospitals ethics file numbers)**

Brock University (2012) *Application forms and templates*. Retrieved from http://www.brocku.ca/research/ethics-and-research-reviews/human-ethics/application-forms-templates

Appendix F: Reminder Emails
(Emails Sent On May 27th, June 3rd, and June 9th)

Dear [Insert Manager Name Here],
Please forward this email to all Registered Nurses on your unit today, if possible. Please delete my email information and these statements before forwarding this email.

Thank you!

- -

Dear *[Insert Unit Name Here] Registered Nurses*,

You were recently invited to participate in an online survey on *Registered Nurses' Perceptions About Facilitators and Barriers to Maternal Skin to Skin Contact in the Operating Room*.

If you have already submitted a survey, thank you very much for your time and participation!

If you have not yet submitted a survey, we would like to remind you that the survey is still available for completion online (with an optional paper survey located in your nursing lounge).

The survey will be available until June 12th 2014.

Please click the electronic link [http://fluidsurveys.com…] to access the survey and consent form or copy and paste the URL into your web browser.

All participants who submit a survey will be entered into a draw to win an Acer Tablet. The winner will be contacted via email after the closing date of the survey.

This survey is being conducted for a Masters thesis project by Magdalena Dobosiewicz BScN, RN at Brock University, supervised by Dr. Lynn Rempel RN, PhD, Associate Professor at Brock University, in order to understand the facilitators and barriers to maternal skin to skin contact in the operating room. Your answers to this survey are important. Please be assured that all your responses will be kept confidential. Responses will be pooled across all four participating hospitals.

We encourage you to participate! Feedback on the survey results will be provided to you after the study has been completed. We again thank you for your time and participation.

Have a great day!

Sincerely,

Magdalena Dobosiewicz
BScN, RN
Masters Student
Faculty of Applied Health Sciences
Brock University

Lynn Rempel
RN, PhD
Associate Professor
Department of Nursing
Brock University

Appendix G: Electronic Survey Consent
(Available Online May 22nd, 2014)

Date: May 22nd to June 12th 2014
Project Title: Registered Nurses' Perceptions About Facilitators and Barriers to Maternal Skin to Skin Contact in the Operating Room

Principal Student Investigator:
Magdalena Dobosiewicz, BScN, RN
Masters Student
Faculty of Applied Health Sciences
Brock University
905-650-4547
md06hz@brocku.ca

Faculty Supervisor:
Dr. Lynn Rempel RN, PhD
Associate Professor
Department of Nursing
Brock University
905-688-5550 x 4774
lrempel@brocku.ca

INVITATION
You are invited to participate in a research study. The purpose of this study is to explore Registered Nurses' perceptions about the practice of maternal skin to skin contact in the operating room. This study has been developed to meet the requirements of Magdalena Dobosiewicz's Master of Arts in Applied Health Sciences Degree.

WHAT'S INVOLVED
This study will involve Registered Nurses from four hospitals within Ontario. You will be asked to provide consent to participate in this study. If you click "Agree" at the end of this consent form, you will be linked to the electronic survey. This one time electronic survey may take you 15 to 20 minutes to complete. A paper copy of the survey will also be provided on your unit if you prefer to use this method. We know that your time is valuable and we greatly appreciate your voluntary participation in this study.

Participating in this study will contribute to the maternal child health and research community's insight on the practices of maternal skin to skin contact in the operating room. This knowledge could influence future practice on labour and delivery units. There is no promise that you will get any benefits from participating in this survey, but you might increase your awareness of the factors related to skin to skin contact in the operating room. Your participation will allow you to provide constructive feedback about the practice of skin to skin contact in the operating room.

There are no known or anticipated risks associated with participation in this study, although some of demographic responses may potentially identify you. The open-ended questions in the survey may also pose risks of identifying either patient specific or colleague identifiable information. Please remember not to share any personal or confidential information about other individuals in the survey. Also no individual survey will be examined in order to maintain your confidentiality. If you believe that some parts of the survey may identify you as an individual or if you feel uncomfortable sharing any information you may choose not to answer any section of the survey and still be entered into a draw.

To show appreciation for your participation in this study, once you have completed the online survey, a separate window will appear asking if you would like to enter your email address into a draw. This draw will provide you with a chance to win an Acer Tablet.

CONFIDENTIALITY

Your email address will not be connected to your survey in any way, so that your confidentiality is maintained. After the draw is complete, we will dispose of your email address by deleting it from the computer and any paper copies that were made for the draw will be shred. Only the name of the winner will be retained.

The survey will be completed through a Canadian online survey company called Fluid Survey, which will have the security settings set to high to ensure the confidentiality of results. If you wish to save a partially completed survey and return to complete the survey at a later time, complete this survey at home to maintain your confidentiality. If you save your partially completed survey on a work computer, anyone using the work computer will have access to your survey response.

All responses from all four hospitals will be pooled for analysis. No results will be reported individually or by specific hospital. We ask you to respect your fellow colleagues and patients by not including any information that identifies or could potentially identify individuals.

Data collected during this study will be stored on a password secured personal laptop, the secured Brock personal accounts of both investigators, and a password protected external hard drive. Electronic data will be retained for five years after the publication of the study results. After this time the data will be deleted from all electronic devices.

Access to this data will be restricted to the principal student investigator Magdalena Dobosiewicz, and faculty supervisor Dr. Lynn Rempel. By submitting your survey you are providing permission for the above individuals to have access to all of the research information submitted including potential identifying information such as your demographics.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you wish, you may decline to answer any questions or decline to participate in any component of this study. Once the electronic survey is submitted, since the data is anonymous, we will be unable to retrieve your survey if you decide to withdraw from the study. You may exit out of the survey at any time by closing the electronic survey window and can also delete all your responses prior to submitting the survey if you wish. Therefore, if you plan not to complete the electronic survey at any time or delete your responses before submitting the survey there will be no penalty. Your employment status will also not be effected if you plan to participate or not participate in this study.

PUBLICATION OF RESULTS

A summary of the aggregated results will be emailed to your managers in order to be distributed to all nurses on your labour and delivery unit. After the closing date of the study a feedback email will be provided to you via your work email address, this will explain further details on accessing these results. Results of this study may be published in professional journals and presented at conferences.

CONTACT INFORMATION AND ETHICAL CLEARNACE

If you have any questions about this study, wish to provide feedback at any time, or require further information, please contact Magdalena Dobosiewicz at md06hz@brocku.ca or Dr. Lynn Rempel at lrempel@brocku.ca.

This study has been reviewed and received ethical clearance through the Research Ethics Board at Brock University [File# 13-149 – REMPEL] and **hospital specific REB [File#].**

If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at Brock University: (905) 688-5550 Ext. 3035, reb@brocku.ca or the hospital you are employed by **insert specific hospital contact information here**.

Thank you for your assistance in this project. This online consent form will be available for you to print off and/or copy and paste into a word document, therefore please print and/or create a copy of this consent form for your records before proceeding to the electronic survey.

CONSENT FORM

I agree to participate in this study described above. I have made this decision based on the information I have read in this consent. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future if needed. I understand that I will be unable to withdraw from the study once I have submitted the survey.

If you agree with the following consent please click "Agree" to be connected to the electronic survey. This means that you CONSENT to all of the details provided. If you would rather respond to this survey at home please forward the link to this survey to your home email address: [https:// specific URL for each hospital]

If you wish to SAVE your responses and return to complete the survey at a later time, *complete this survey at home to maintain your confidentiality*. If you save your responses on a work computer, and plan to return to the survey, anyone using the work computer will have access to your survey responses.

Thank you for participating in this study!

[AGREE] **[DISAGREE]**

Appendix H: Letter of Consent for Paper Survey
(Paper Surveys Available in Hospitals on May 22nd, 2014)

Date: May 22nd to June 12th 2014

Project Title: Registered Nurses' Perceptions About Facilitators and Barriers to Maternal Skin to Skin Contact in the Operating Room

Principal Student Investigator:
Magdalena Dobosiewicz
BScN, RN
Maters Student
Faculty of Applied Health Sciences
Brock University
md06hz@brocku.ca

Faculty Supervisor:
Dr. Lynn Rempel
RN, PhD
Associated Professor
Department of Nursing
Brock University
905-688-5550 x 4774
lrempel@brocku.ca

INVITATION
You are invited to participate in a research study. The purpose of this study is to explore Registered Nurses' perceptions on the facilitators and barriers that occur during maternal skin to skin contact practices in the operating room. This study has been developed to meet the requirements of Magdalena Dobosiewicz's Master of Arts in Applied Health Sciences Degree.

WHAT'S INVOLVED
This study will involve Registered Nurses from four hospitals within Ontario. You will be asked to provide your consent to participate in this study. This optional one time paper survey may take you 15 to 20 minutes to complete. There will be two identical consent forms attached at the beginning of the paper survey. Please be sure to detach both consents, place the signed consent and your survey in the locked box located in your nursing lounge and keep a copy of this consent for your own records. We know that your time is valuable and we greatly appreciate your voluntary participation in this study.

Participating in this study will contribute to the maternal child health and research community's insight on the practices of maternal skin to skin contact in the operating room. This knowledge could influence future practice on labour and delivery units. There is no promise that you will get any benefits from participating in this survey, but you might increase your awareness of the factors related to skin to skin contact in the operating room. Your participation will allow you to provide constructive feedback about the practice of skin to skin contact in the operating room.

There are no known or anticipated risks associated with participation in this study, although some of demographic responses may potentially identify you. The open-ended questions in the survey may also pose risks of identifying either patient specific or colleague identifiable information. Please remember not to share any personal or confidential information about other individuals in the survey. Also no individual survey will be examined in order to maintain your confidentiality. If you believe that some parts

of the survey may identify you as an individual or if you feel uncomfortable sharing any information you may choose not to answer any section of the survey and still be entered into a draw.

To show appreciation for your participation, at the end of this survey there is a detachable page asking if you would like to enter your email address into a draw. This draw will provide you with a chance to win an Acer Tablet. To maintain your confidentiality detach the draw page and place it in the locked box located in your nursing lounge.

CONFIDENTIALITY
Your email address will not be connected to your survey in any way as long as you detach the consent and draw form from your survey. After the draw is complete, the form with your email address will be shredded. Only the name of the winner will be retained.

These surveys will be held in a locked box in the nursing lounge on your unit to maintain your confidentiality. All responses from all four hospitals will be pooled for analysis. No results will be reported individually or by specific hospital. We ask you to respect your fellow colleagues and patients by not including any information that identifies or could potentially identify individuals.

Data collected during this study will be stored on a password secured personal laptop, the secured Brock personal accounts of both investigators (Magdalena Dobosiewicz, BScN, RN and Dr. Lynn Rempel, RN, PhD), and a password protected external hard drive. Electronic data will be retained for five years after the publication of the study results. After this time the data will be deleted from all electronic devices.

These surveys will be kept locked in a residential safe before and after the data from the survey is transferred. All of the data will be backed up on a password protected external hard drive. All data will be kept for five years after the publication of the study results. After five years, the data will be deleted from all electronic devices and paper surveys will be shredded.

Access to this data will be restricted to the principal student investigator Magdalena Dobosiewicz, and faculty supervisor Dr. Lynn Rempel. By submitting your survey you are providing permission for the above individuals to have access to all of the research information submitted including potential identifying information such as your demographics.

VOLUNTARY PARTICIPATION
Participation in this study is voluntary. If you wish, you may decline to answer any questions or decline to participate in any component of this study. Once the paper survey is submitted, since the data is anonymous, we will be unable to retrieve your survey if you decide to withdraw from the study. You may stop completing the paper survey at any time and can discard the survey as you wish if you plan to not share your responses. Therefore, if you plan to not complete the paper survey at any time there will be no penalty. Your employment status will also not be effected if you plan to participate or not

participate in this study.

PUBLICATION OF RESULTS
A summary of the aggregated results from this study will be emailed to your managers in order to be distributed to all nurses on your labour and delivery unit. A feedback email provided to you via your work email address after the closing date of this study will explain further details on accessing these results. Results of this study may be published in professional journals and presented at conferences.

CONTACT INFORMATION AND ETHICAL CLEARNACE
If you have any questions about this study, wish to provide feedback at any time, or require
further information, please contact Magdalena Dobosiewicz at md06hz@brocku.ca or Dr. Lynn
Rempel at lrempel@brocku.ca.

This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University [File# 13-149 – REMPEL], and **hospital specific REB [File#].** .

If you have any comments or concerns about your rights as a research participant, please contact the **Research Ethics Office at Brock University**: (905) 688-5550 Ext. 3035, reb@brocku.ca or the hospital you are employed by **insert specific hospital contact information here**.

CONSENT FORM
I agree to participate in this study described above. I have made this decision based on the information I have read in this consent. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future if needed. I understand that I will be unable to withdraw from the study once I have submitted the survey into the locked box.

Feel free to take this survey home with you and return it to the locked box provided within your nursing lounge once completed. Thank you for taking the time to read this consent. Your participation is greatly appreciated.

By submitting this survey into the locked box labeled "Registered Nurses' Opinions About Maternal Skin to Skin Contact in the Operating Room Study Lock Box" provided in your nursing lounge you AGREE to this CONSENT and all of the details provided.

Once this survey is complete please place it in the locked box located in your nursing lounge. Keep a copy of this consent form for your own records. Please detach the draw form found at the end of this paper survey to maintain your confidentiality, and place this draw form into the same locked box with your completed survey.

Thank you again for your participation!

Appendix I: Feedback Email
(Email Sent on June 13th, 2014)

Dear [Insert Unit Manager Name Here],
Please forward this email to all Registered Nurses on your unit today, if possible. Please delete my email information and these statements before forwarding this email.

Thank you!

- -

Dear *[Insert Unit Name Here] Registered Nurses,*

I would like to thank all the Registered Nurses who participated in the study entitled "Registered Nurses' Perceptions about Facilitators and Barriers to Maternal Skin to Skin Contact in the Operating Room".

The data collected through the electronic and optional paper surveys are contributing to knowledge about potential obstacles and promoters to maternal skin to skin contact within the operating room. This knowledge could influence future practice on labour and delivery units. I hope that this survey may have spurred some interest about the various factors influencing the practices of skin to skin contact in the operating room.

Please remember that any data pertaining to you as an individual participant has been kept confidential. Once all the data has been collected and analyzed, I plan to share the results with the nursing research and practice communities through seminars, conferences, presentations, and journal articles.

Your manager will provide final study results to you via your work email address after the completion of this study, this will be accessible to all nurses on your unit. The anticipated completion date is **December 2014**. In the meantime, if you have any questions about this study or require further information, please do not hesitate to contact Magdalena Dobosiewicz at md06hz@brocku.ca or Dr. Lynn Rempel lrempel@brocku.ca.

If you wish to seek provincially recognized information about SSC in the OR you may access the Provincial Council for Maternal and Child Health website by clicking on the link provided or copying and pasting the URL into your web browser. [http://pcmch.on.ca/initiatives/mother-baby-dyad-care]

This project was reviewed by, and received ethics clearance through Brock University Ethics Committee and each individual hospital ethics committees involved in this study. Should you have any comments or concerns resulting from your participation in this study, please do not hesitate to contact us or your hospital ethics research board. **Brock University** (905) 688-5550 Ext. 3035, reb@brocku.ca, and **insert individual hospital contact information here.**

Thank you again for your participation!

Magdalena Dobosiewicz
BScN, RN
Masters Student
Faculty of Applied Health Sciences
Brock University
905-650-4547, md06hz@brocku.ca

Lynn Rempel
RN, PhD
Associate Professor
Department of Nursing
Brock University
905-688-5550 x 4774, lrempel@brocku.ca

Appendix J: Descriptive Survey

Registered Nurses' Perceptions About Facilitators and Barriers to Maternal Skin to Skin Contact in the Operating Room

The focus of this survey is on MATERNAL skin to skin contact (SSC) with HEALTHY TERM SCHEDULED ELECTIVE NON-EMERGENT PRIMARY AND REPEAT CESAREAN SECTION PATIENTS beginning in the operating room (OR) (*NOT* the recovery room). This section of the survey is about your perception of current practices in your hospital regarding maternal SSC. Please **select** your response to the best of your knowledge.

1. **Does your labour and delivery unit have a specific policy and procedure for maternal SSC after vaginal deliveries?** (Yes/No/I don't know)

2. **Is your labour and delivery unit currently practicing maternal SSC after vaginal deliveries?** (Yes/ No/ I don't know)

3. **Does your labour and delivery unit have a specific policy and procedure for maternal SSC in the OR?** (Yes/No/ I don't know)

4. **Is your labour and delivery unit currently practicing maternal SSC in the OR?** (Yes/No/ I don't know)

5. **On average HOW LONG are the mother and baby separated from each other in the OR after delivery ___** (minutes)**?**

6. **Does your hospital provide patients with written information to educate them about SSC in the OR?** (Yes/No/I don't know)

7. **Has there been any education provided to you in the past on maternal SSC after vaginal deliveries?** (Yes/No)

8. **Has there been any education provided to you in the past on maternal SSC after cesarean section deliveries?** (Yes/No)

9. **Have you been supervised in the technique to perform maternal SSC in the OR?** (Yes/No)

The remainder of the survey will ask you to provide your perception about maternal SSC in the OR using rating scales. Please see example below on how to use the scales in the survey.

EXAMPLE QUESTION: *I believe exercising has benefits towards my health.*

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

If I strongly agree with this statement I would choose 7 out of 7. If I strongly disagree with the statement I would choose 1 out of 7. If I more strongly agree than disagree with the statement I would choose a higher number and if I more strongly disagree I would choose a lower number. Please answer the following questions in this manner.

	Strongly Disagree						**Strongly Agree**
I *intend* to practice maternal SSC in the OR with all my future healthy term scheduled elective cesarean section patients.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
	Extremely Unlikely						**Extremely Likely**
How *likely* are you to practice maternal SSC in the OR when you have *the next opportunity?*	**1**	**2**	**3**	**4**	**5**	**6**	**7**
How many times in the last 2 months *were you in the role* where you would have been expected to provide SSC in the OR? **_____ times**							
Approximately how many times in the last 2 months have you *actually initiated SSC* in the OR? **_____ times**							
In the last 2 months how many times have you *pre operatively educated* scheduled healthy term elective cesarean section patients about maternal SSC in the OR? **____ times**							
Approximately how much time do you spend *educating* each patient about maternal SSC in the OR pre-operatively? **_____ minutes**							
If you have not practiced SSC in the OR please omit the next question							
Approximately how long does it take you to *initiate* maternal SSC after scheduled elective cesarean delivery? **____ minutes**							

Please indicate how much you disagree or agree with the following statements.

	Strongly Disagree						**Strongly Agree**
I am an advocate for performing maternal SSC in the OR.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
There is not enough time to initiate maternal SSC in the OR after delivery.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Applying maternal SSC in the OR increases my workload and affects completion of designated OR tasks.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Maternal SSC in the OR positively affects breastfeeding.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
If SSC is provided in the OR, it prevents me from administering vitamin k and/or eye ointment.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Maternal SSC in the OR is an added burden to labour and delivery nurses.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Maternal SSC after delivery is unclean.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Mothers think that maternal SSC after delivery is unclean.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helping mothers to provide maternal SSC in the OR is a positive experience for nurses.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I am stressed when I provide SSC after a cesarean section.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Maternal SSC should be initiated within 30 minutes after delivery.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Maternal SSC should be initiated immediately after delivery.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Maternal SSC in the OR does not allow appropriate patient privacy.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Maternal SSC in the OR is a safe practice.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Maternal SSC in the OR is professionally satisfying.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Maternal SSC in the OR within 30 minutes after delivery is feasible.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Maternal SSC in the OR immediately after delivery is feasible.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

The EARLIEST that maternal SSC can be initiated in the OR in my opinion is ____ **(minutes)** after delivery.

Please indicate how much you disagree or agree that SSC in the OR results in each of the following outcomes.

	Strongly Disagree						**Strongly Agree**
Increases newborn temperature	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Normalizes newborn respiratory rate	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Normalizes newborn heart rate	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Decreases newborn crying	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Increases maternal bonding	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Increases maternal satisfaction	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Increases maternal confidence	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Decreases maternal anxiety	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Other:_____ _____(Specify and rate out of 7)	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please indicate how much you disagree or agree with the following statements.

	Strongly Disagree						**Strongly Agree**
The overall organizational culture of my hospital has an influence on my initiation of maternal SSC in the OR.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
The opinions of other people about the initiation of maternal SSC in the OR are important to me.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please indicate how much the following individuals approve or disapprove of maternal SSC in the OR.

	Strongly Disapprove						**Strongly Approve**
Administration (e.g. Program Director)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Manager	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Obstetrician	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Anesthesiologists	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Pediatricians	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Lactation Consultants	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Labour and Delivery Nursing Colleagues	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Special Care Nursery Nursing Colleagues	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Patients	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Patient's Support Person	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Other_____ _____(Specify and rate out of 7)	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please indicate how much you agree or disagree with the following statements.

	Strongly Disagree						**Strongly Agree**
I have full control of when or when not to initiate maternal SSC in the OR.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I am comfortable and confident with initiating maternal SSC within 30 minutes after delivery.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

The education provided to me by my employer has been beneficial for my ability to provide maternal SSC in the OR. ***Please select N/A if you haven't been provided education by your employer.***	**1**	**2**	**3**	**4**	**5**	**6**	**7** **N/A**
Policies and procedures influence me to initiate maternal SSC in the OR.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
If your hospital DOES NOT have any policies and procedures on maternal SSC in the OR please omit these next two questions and move on to the next page.							
The policy and procedure in my hospital is clear and understandable.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
The policy and procedure makes it easier for me to determine when to perform maternal SSC in the OR.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please indicate how much you agree or disagree that the following situations below make it DIFFICULT to apply SSC in the OR.

	Strongly Disagree						**Strongly Agree**
Patient feeling nauseated.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Patient having dry heaves and or vomiting.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Patient feeling shaky.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Patient having breathing difficulties.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Patient feeling drowsy.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Patient being incoherent.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Patient being in pain after delivery in the OR.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Altered maternal movement due to anesthesia.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Vision problems from anesthetic.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Patient having a postpartum hemorrhage.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Patient requiring a blood transfusion.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Patient requiring to be transferred to ICU or another hospital.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Position of the mother on the OR table.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
No maternal support person available during the procedure to assist with SSC.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Monitoring the newborn.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Newborn having hypothermia after delivery.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Newborn having health factors requiring treatment (e.g. cardiology, respiratory, resuscitation etc.).	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Newborn needing to be transferred to the special care nursery/NICU/Different Hospital.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Other:_____ _____(Specify and rate out of 7)	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please indicate how much you agree or disagree that the following environmental issues make it DIFICULT to apply maternal SSC.

	Strongly Disagree						**Strongly Agree**
Location of equipment in the OR (e.g. OR table, general anesthetic machine, baby blankets, baby warmer etc.).	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Equipment positioning on mother (e.g. BP cuff, O2 sat probe, ECG monitors, Intravenous line).	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Location of support person in OR.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Not enough staff in the OR to both perform maternal SSC and complete required OR tasks.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Other:_____ _____(Specify and rate out of 7)	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please indicate how much you agree or disagree that the following personal safety issues make it DIFFICULT to apply SSC in the OR.

	Strongly Disagree						**Strongly Agree**
Tripping or falling risks related to OR setup.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Assisting patients to hold the baby causes back, shoulder and muscle strain.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Other:_____ _____(Specify and rate out of 7)	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please indicate how much you agree or disagree that the following factors would make it EASIER for you to practice maternal SSC in the OR.

	Strongly Disagree						**Strongly Agree**
Having a Special Care Nursery Nurse initially apply SSC in the OR.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Delaying newborn assessment including medication administration, weighing and, measuring if the newborn is stable.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Being provided with education on maternal SSC technique and OR set up.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Changing the current OR set up.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Having an appointed leader for maternal SSC in the OR.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Other:_____ _____(Specify and rate out of 7)	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please provide your idea about ONE of the best ways to help minimize the barriers to maternal SSC in the OR?	**Please provide your idea about ONE of the best ways to help maximize the facilitators to maternal SSC in the OR?**

Personal Demographics

Please indicate the name of the labour and delivery unit at which you are employed:	Hospital Name: _____ _____
Please **select** your gender	Male / Female / Other
How old are you?	_____years
How many years have you been working on labour and delivery as a Registered Nurse?	_____years
Please **select** your current employment status	Full Time / Part Time / Causal
Please **select** the HIGHEST education that you have currently completed to date	Diploma / Bachelors / Masters

THE END (See Next Page for Draw Details)

Thank You for Completing This Survey!

Please remove this page of the survey in order to maintain your confidentiality.

To show appreciation for your participation in this survey your email address will be entered into a draw to win an Acer Tablet.

The winner will be contacted via email by the end of June to receive their Acer Tablet.

Email Address: _____

Thank You Again and Have a Wonderful Day!